

U.S. ARMY
ENVIRONMENTAL
CENTER

Tooele Army Depot

Revised Final Remedial Investigation Addendum Report for Operable Units 4, 8, and 9

Volume III (Appendices I through J)

February 1997

PART II

Rust Environment and Infrastructure Grand Junction, Colorado 81506

Prepared for
U.S. Army Environmental Center
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Method Blanks - Chemical Quality Control - Phase I RI data

Lot		Test Name	Meas Bool Value	Unit Meas	Flag Code	Data Qual
Chemica	l Class:	ANIONS				
IHJ	BR	BROMIDE	LT 8.83000	μg/g		
IHG	BR	BROMIDE	LT 8.83000			
IHI	BR	BROMIDE	LT 8.83000			
IHL	BR	BROMIDE	LT 8.83000	μg/g		
IHO	BR	BROMIDE	LT 8.83000	μ <b>g</b> /g		
IHM	BR	BROMIDE	LT 8.83000	μg/g		
IHX	BR	BROMIDE	LT 8.83000	μg/g		
IHW	BR	BROMIDE	LT 50.00000	μg/l		
IHV	BR	BROMIDE	LT 8.83000	μg/g		
IHU	BR	BROMIDE	LT 50.00000	μ <b>g</b> /l		
IHS	BR	BROMIDE	LT 8.83000	μg/g		
IHR	BR	BROMIDE	16.60000	μg/g		
IHQ	BR	BROMIDE	LT 8.83000	μg/g		
IHP	BR	BROMIDE	LT 8.83000	μg/g		
IHK	BR	BROMIDE	LT 8.83000	μg/g		
IHH	BR	BROMIDE	LT 50.00000	μg/l		
IHF	BR	BROMIDE	LT 8.83000	μg/g		
IHD	BR	BROMIDE	LT 8.83000	μg/g		
IHJ	CL	CHLORIDE	LT 39.60000	μg/g		
IHF	CL	CHLORIDE	LT 39.60000	μg/g		
IHG	CL	CHLORIDE	LT 39.60000	μg/g		
IHD	CL	CHLORIDE	LT 39.60000	μg/g		
IHH	CL	CHLORIDE	LT 273.00000	μg/l		
IHK	CL	CHLORIDE	LT 39.60000	μg/g		
IHM	CL	CHLORIDE	LT 39.60000	μg/g		
IHP	CL	CHLORIDE	LT 39.60000	μg/g		
IHO	CL	CHLORIDE	LT 39.60000	μg/g		
IHX	CL	CHLORIDE		μg/g		
IHW	CL	CHLORIDE		μg/l		
IHV	CL	CHLORIDE		μg/g		
IHU	CL	CHLORIDE		μg/l		
IHS	CL	CHLORIDE		μg/g		
IHR	CL	CHLORIDE		μg/g		
IHQ	CL	CHLORIDE		μg/g		
IHL	CL	CHLORIDE	LT 39.60000			
IHI IHI	CL	CHLORIDE	LT 39.60000			
	F	FLUORIDE		μg/g		
IHD IHF	F	FLUORIDE		μg/g		
IHG	F F	FLUORIDE		μg/g		
IHH	F	FLUORIDE FLUORIDE		μg/g		
IHI	F	FLUORIDE		μ <b>g/</b> l		
IHK	F	FLUORIDE		μg/g		
IHL	F	FLUORIDE		μg/g		
IHM	F	FLUORIDE		μg/g /σ		
IHO	F	FLUORIDE		μg/g		
IHP	F	FLUORIDE		μg/g ···c/c		
IHQ	F	FLUORIDE		μg/g		
IHR	F	FLUORIDE		μg/g		
IHS	F	FLUORIDE		μg/g		
IHU	F	FLUORIDE		μg/g		
IHV	F	FLUORIDE		μg/l		
11 Y	I.	FLOORIDE	LT 19.20000	μg/g		

Lot		Test Name	Meas Bool	alue	Unit Meas	Flag Code	Data Qual
Chemica	l Class: A	INIONS					
IHW	F	FLUORIDE	LT 7	1.00000	μg/l		
IHX	F	FLUORIDE	LT 1:	9.20000	μg/g		
IHJ	NO2	NITRITE	LT :	3.16000	μg/g		
IHD	NO2	NITRITE	LT :	3.16000	μg/g		
IHE	NO2	NITRITE	LT 2	8.30000	$\mu g/l$		
IHF	NO2	NITRITE	LT	3.16000	μg/g		
IHG	NO2	NITRITE	LT :	3.16000	µg/g		
IHI	NO2	NITRITE		3.16000	μg/g		
IHK	NO2	NITRITE		3.16000	μg/g		
IHL	NO2	NITRITE	•	3.16000			
IHM	NO2	NITRITE		3.16000			
IHO	NO2	NITRITE		3.16000			
IHP	NO2	NITRITE		3.16000			
				3.16000			
IHQ	NO2	NITRITE		3.16000			
IHR	NO2	NITRITE		3.16000	μg/g μg/g		
IHS	NO2	NITRITE		3.30000	μ <b>g</b> /g μ <b>g</b> /l		
IHU	NO2	NITRITE		3.16000			
IHV	NO2	NITRITE		3.30000			
IHW	NO2	NITRITE			μg/l		
IHX	NO2	NITRITE		3.16000			
IHJ	NO3	NITRATE		3.36000	μg/g		
IHD	NO3	NITRATE		3.36000	μg/g		
IHE	NO3	NITRATE		1.30000	μ <b>g/l</b>		4
IHF	NO3	NITRATE		3.36000	μg/g		•
IHG	NO3	NITRATE		3.36000	μg/g		
ІНІ	NO3	NITRATE		3.36000	μ <b>g</b> /g	_	
IHK	NO3	NITRATE		2.67000	μg/g	P	
IHL	NO3	NITRATE		2.82000		P	
IHM	NO3	NITRATE		3.36000			
IHO	NO3	NITRATE		36000			
IHP	NO3	NITRATE		3.36000	μg/g		
IHQ	NO3	NITRATE	LT 3	36000	μg/g		
IHR	NO3	NITRATE	4	.65000	μg/g		
IHS	NO3	NITRATE		36000	μg/g		
IHU	NO3	NITRATE	LT 24	.30000	μg/l		
IHV	NO3	NITRATE		.43000			
IHW	NO3	NITRATE	LT 24	.30000	μg/l		
IHX	NO3	NITRATE	LT 3	.36000	μg/g		
ШЈ	PO4	PHOSPHATE	ND 5	00000	μg/g	T	
ІНЈ	PO4	PHOSPHATE	ND 5	00000	μg/g	T	
ІНЈ	PO4	PHOSPHATE	ND 5	00000	μg/g	T	
IHJ	PO4	PHOSPHATE	ND 5	.00000	µg/g	T	
IHD	PO4	PHOSPHATE	ND 5	.00000	μg/g	T	
IHD	PO4	PHOSPHATE	ND 5	.00000	μg/g	T	
IHD	PO4	PHOSPHATE			μg/g	T	
IHD	PO4	PHOSPHATE	ND 5	.00000	μg/g	Т	
IHE	PO4	PHOSPHATE			μg/l		
IHF	PO4	PHOSPHATE			μg/g	Т	
IHF	PO4	PHOSPHATE		.00000		Т	
IHF	PO4	PHOSPHATE		.00000		T	
		PHOSPHATE			μg/g	T	1
IHF	PO4			.00000		Ť	
IHG	PO4	PHOSPHATE		.00000		T	
IHG	PO4	PHOSPHATE	ND 5	JUUUU	HR.R		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	<del></del>	Test Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class:	ANIONS					
IHG	PO4	PHOSPHATE	ND	5.00000	μg/g	Т	
IHG	PO4	PHOSPHATE	ND	5.00000		T	
IHI	PO4	PHOSPHATE	ND	5.00000		T	
IHI	PO4	PHOSPHATE	ND	5.00000		Ť	
IHI	PO4	PHOSPHATE	ND	5.00000		T	
IHI	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHK	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHK	PO4	PHOSPHATE	ND	5.00000	μg/g	Ť	
IHK	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHK	PO4	PHOSPHATE	ND	5.00000		T	
IHL	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHL	PO4	PHOSPHATE	ND	5.00000	μg/g		
IHL	PO4	PHOSPHATE	ND		μg/g	T	
IHL	PO4	PHOSPHATE		5.00000	μg/g	T	
IHM	PO4	PHOSPHATE	, ND	5.00000	μg/g	T	
IHM IHM	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHM	PO4	PHOSPHATE	ND	5.00000	µg/g	T	
IHM	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHO	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHO			ND	5.00000	μg/g	T	
IHO	PO4 PO4	PHOSPHATE	ND	5.00000	μg/g	<b>T</b> ·	
		PHOSPHATE	ND	5.00000	μg/g	T	
IHO	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHP	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHP	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHP	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHP	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHQ	PO4	PHOSPHATE	ND	5.00000	μ <b>g</b> /g	T	
IHQ	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHQ	PO4	PHOSPHATE	ND	5.00000	µg/g	T	
IHQ	PO4	PHOSPHATE	ND	5.00000	μg/g	Т	
IHR	PO4	PHOSPHATE		9.56000	μg/g	T	
IHR	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHR	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHR	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHS	PO4	PHOSPHATE		10.60000	μg/g	T	
IHS	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHS	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHS	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHU	PO4	PHOSPHATE	LT	33.00000	μg/l		
IHV	PO4	PHOSPHATE		7.28000	μg/g	T	
IHV	PO4	PHOSPHATE	ND	5.00000	μg/g	T	
IHV	PO4	PHOSPHATE	ND		μg/g	T	
IHV	PO4	PHOSPHATE	ND		μg/g	Т	
IHW	PO4	PHOSPHATE	LT		μg/l		
IHX	PO4	PHOSPHATE			μg/g	T	
IHX	PO4	PHOSPHATE	ND		μg/g	T	
IHX	PO4	PHOSPHATE	ND		μg/g	T	
IHX	PO4	PHOSPHATE	ND		μg/g	T	
IHJ	SO4	SULFATE			μg/g		
IHD	SO4	SULFATE			μg/g		
IHF	SO4	SULFATE			μg/g		
IHG	SO4	SULFATE			μg/g		
IHH	SO4	SULFATE	LT	137.00000			

Lot		Test Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class:	ANIONS					
IHI	SO4	SULFATE		24.20000	μg/g		
IHK	SO4	SULFATE		27.40000	μg/g		
IHL	SO4	SULFATE		25.60000	μg/g		
IHM	SO4	SULFATE		26.40000			
IHO	SO4	SULFATE		27.90000			
IHP	SO4	SULFATE		26.50000			
IHQ	SO4	SULFATE		26.10000			
IHR	SO4	SULFATE	GT	500.00000	μg/g		
IHS	SO4	SULFATE		59.30000	μg/g		
IHU	SO4	SULFATE	LT	137.00000			
IHV	SO4	SULFATE		59.70000			
IHW	SO4	SULFATE	LT	137.00000			
IHX	SO4	SULFATE		57.20000			
Chemical	Class:	CYANIDE					
ZTY	CYN	CYANIDE	LT	5.00000	μg/g		
ZUD	CYN	CYANIDE	LT	5.00000	μg/i		
ZUG	CYN	CYANIDE	LT	5.00000	µg/g		
ZUK	CYN	CYANIDE	LT	5.00000	μg/g		
ZUJ	CYN	CYANIDE	LT	5.00000	μg/g		
ZUQ	CYN	CYANIDE	LT	5.00000	μg/g		
ZUP	CYN	CYANIDE	LT	5.00000	$\mu g/l$		
ZUO	CYN	CYANIDE	LT	5.00000	μg/g		
ZUN	CYN	CYANIDE	LT	5.00000	μg/g		
ZUM	CYN	CYANIDE	LT	5.00000	μg/g		
ZUF	CYN	CYANIDE	LT	5.00000	μg/g		
ZUC	CYN	CYANIDE	LT	5.00000	μg/g		
ZUA	CYN	CYANIDE	LT	5.00000	μg/g		
ZUB	CYN	CYANIDE	LT	5.00000	μg/g		
Chemical (	Class: I	DIOXINS					
ZUH	OCDD	OCTACHLORODIBENZODIOXIN		0.00003	μg/g		
ZUI	OCDD	OCTACHLORODIBENZODIOXIN		0.00100	μg/l		
ZUT	OCDD			0.00004	μg/g		
ZUU	OCDD	OCTACHLORODIBENZODIOXIN		0.00040	μ <b>g</b> /l		
ZUH	OCDF	OCTACHLORODIBENZOFURAN	ND	0.00000		R	
ZUI	OCDF	OCTACHLORODIBENZOFURAN	ND	0.00001	μg/l	R	
ZUT	OCDF	OCTACHLORODIBENZOFURAN	ND	0.00000	μg/g	R	
ZUU	OCDF	OCTACHLORODIBENZOFURAN	ND	0.00003	μg/l	R	
ZUH	TCDD	2,3,7,8 TETRACHLORODIBENZODIOXIN	ND	0.00000	μg/g	R	
ZUI	TCDD	2,3,7,8 TETRACHLORODIBENZODIOXIN	ND	0.00000	μg/l	R	
ZUT	TCDD	2,3,7,8 TETRACHLORODIBENZODIOXIN	ND	0.00000	μg/g	R	
ZUU	TCDD	2,3,7,8 TETRACHLORODIBENZODIOXIN	ND	0.00000	μg/l	R	
ZUH	TCDF	2,3,7,8 TETRACHLORODIBENZOFURAN	ND	0.00000	μg/g	R	
ZUI	TCDF	2,3,7,8 TETRACHLORODIBENZOFURAN	ND	0.00000	μg/l	R	
ZUT	TCDF	2,3,7,8 TETRACHLORODIBENZOFURAN		0.00000	μg/g		
ZUU	TCDF	2,3,7,8 TETRACHLORODIBENZOFURAN	ND	0.00000	μg/l	R	
ZUH	THCD	TOTAL HEXACHLORODIBENZO-P-DIOXINS	ND	0.00000	μg/g	R	
ZUI	THCD		ND	0.00000	μg/l	R	
201			ND	0.00000	μg/g	R	
	THCD	,					
ZUT ZUU	THCD		ND	0.00001	μg/l	R	į

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: DI	OXINS					
ZUI	THCDF	TOTAL HEXACHLORODIBENZOFURANS	ND	0.00000	μg/l	R	
ZUT	THCDF	TOTAL HEXACHLORODIBENZOFURANS		0.00000			
ZUU	THCDF	TOTAL HEXACHLORODIBENZOFURANS	ND	0.00001		R	
ZUH	THPCD	TOTAL HEPTACHLORODIBENZO-P-DIOXIN		0.00000	. •		
ZUI	THPCD	TOTAL HEPTACHLORODIBENZO-P-DIOXIN	ND	0.00005		R	
ZUT	THPCD	TOTAL HEPTACHLORODIBENZO-P-DIOXIN		0.00000	μg/g		
ZUU	THPCD	TOTAL HEPTACHLORODIBENZO-P-DIOXIN	ND	0.00005	μg/l	R	
ZUH		TOTAL HEPTACHLORODIBENZOFURANS	ND	0.00000	μg/g	R	
ZUI		TOTAL HEPTACHLORODIBENZOFURANS	ND	0.00000	μg/l	R	
ZUT	THPCDF	TOTAL HEPTACHLORODIBENZOFURANS	ND	0.00000	μg/g	R	
ZUU	THPCDF	TOTAL HEPTACHLORODIBENZOFURANS	ND	0.00001	μg/l	R	
ZUH	TPCDD	TOTAL PENTACHLORODIBENZO-P-DIOXIN	ND	0.00000	μg/g	R	
ZUI	TPCDD	TOTAL PENTACHLORODIBENZO-P-DIOXIN	ND	0.00001	μg/l	R	
ZUT	TPCDD	TOTAL PENTACHLORODIBENZO-P-DIOXIN	ND	0.00000	μg/g	R	
ZUU	TPCDD	TOTAL PENTACHLORODIBENZO-P-DIOXIN	ND	0.00001	μg/l	R	
ZUH	TPCDF	TOTAL PENTACHLORODIBENZOFURANS	ND	0.00000	μg/g	R	
ZUI	TPCDF	TOTAL PENTACHLORODIBENZOFURANS	ND	0.00000	μg/l	R	
ZUT	TPCDF	TOTAL PENTACHLORODIBENZOFURANS		0.00000	μg/g		
ZUU	TPCDF	TOTAL PENTACHLORODIBENZOFURANS	ND	0.00001	μg/l	R	
ZUH	TTCDD	TOTAL TETRACHLORODIBENZO-P-DIOXINS	ND	0.00000	μg/g	R	
ZUI	TTCDD	TOTAL TETRACHLORODIBENZO-P-DIOXINS	ND	0.00000	μg/l	R	
ZUT	TTCDD	TOTAL TETRACHLORODIBENZO-P-DIOXINS	ND	0.00000	μg/g	R	
ZUU	TTCDD	TOTAL TETRACHLORODIBENZO-P-DIOXINS	ND	0.00000	μg/l	R	
ZUH	TTCDF	TOTAL TETRACHLORODIBENZOFURANS	ND	0.00000	μg/g	R	
ZUI	TTCDF	TOTAL TETRACHLORODIBENZOFURANS	ND	0.00000	μg/l	R	
ZUT ZUU .	TTCDF	TOTAL TETRACHLORODIBENZOFURANS		0.00000	μg/g -	_	
	TTCDF	TOTAL TETRACHLORODIBENZOFURANS	ND	0.00000	μg/I	R	
		PLOSIVES					
EGV		1,3,5-TRINITROBENZENE	LT	0.35200	μg/g		
EGU		1,3,5-TRINITROBENZENE	LT		μg/l		
EGT		1,3,5-TRINITROBENZENE	LT		μg/g		
EGP		1,3,5-TRINITROBENZENE	LT		μg/g		
EGL		1.3.5-TRINITROBENZENE	LT				
EGK		1,3,5-TRINITROBENZENE	LT	0.35200			
EGJ		1,3,5-TRINITROBENZENE	LT	0.35200			
EGI EGH		1,3,5-TRINITROBENZENE 1,3,5-TRINITROBENZENE	LT	0.35200			
EGG		1,3,5-TRINITROBENZENE	LT	0.35200			
EGF		1,3,5-TRINITROBENZENE	LT	0.35200			
EGE		1,3,5-TRINITROBENZENE	LT	0.35200			
EGL	13DNB	1.3-DINITROBENZENE	LT LT	0.35200			
EGK	13DNB	1,3-DINITROBENZENE	LT	0.27000 0.30400			
EGJ	13DNB	1,3-DINITROBENZENE	LT	0.30400			
EGI	13DNB	1,3-DINTTROBENZENE	LT				
EGH	13DNB	1,3-DINITROBENZENE	LT		μg/g μg/g		
EGG	13DNB	1,3-DINITROBENZENE	LT		μ <b>g</b> /g μ		
EGF	13DNB	1,3-DINITROBENZENE	LT		με⁄ε με⁄ε		
EGE	13DNB	1,3-DINITROBENZENE	LT		μg/g		
EGV	13DNB	1,3-DINITROBENZENE	LT		μg/g μg/g		
EGU	13DNB	1,3-DINITROBENZENE	LT	0.27000			
EGT	13DNB	1,3-DINITROBENZENE	LT		μg/g		
EGP	13DNB	1,3-DINITROBENZENE	LT	0.30400	no/o		
	122110	AND MAIN BENDERFULL	L1	U.3V4UU	me/g		

Lot	To	est Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: EX	(PLOSIVES					
EGV		2,4,6-TRINITROTOLUENE	LT	0.93100	μg/g		
EGU	246TNT	2,4,6-TRINITROTOLUENE	LT	0.76700	μg/l		
EGT	246TNT	2,4,6-TRINITROTOLUENE	LT	0.93100	μg/g		
EGP		2,4,6-TRINITROTOLUENE	LT	0.93100	μg/g		
EGL		2,4,6-TRINITROTOLUENE	LT	0.76700	μg/l		
EGK		2.4,6-TRINITROTOLUENE	LT	0.93100			
EGJ		2.4.6-TRINITROTOLUENE	LT	0.93100			
EGI		2,4,6-TRINITROTOLUENE	LT	0.93100			
EGH		2,4,6-TRINITROTOLUENE	LT	0.93100			
EGG		2,4,6-TRINITROTOLUENE	LT	0.93100			
EGF	246TNT		LT	0.93100			
	246TNT		LT	0.93100			
EGE			LT	1.16000			
EGL	24DNT	2,4-DINTROTOLUENE	LT	0.74400			
EGK	24DNT	2,4-DINITROTOLUENE		0.74400			
EGJ	24DNT	2,4-DINITROTOLUENE	LT				
EGI	24DNT	2,4-DINITROTOLUENE	LT	0.74400			
EGH	24DNT	2,4-DINITROTOLUENE	LT	0.74400			
EGG	24DNT	2,4-DINITROTOLUENE	LT	0.74400			
EGF	24DNT	2,4-DINITROTOLUENE	LT	0.74400			
EGE	24DNT	2,4-DINITROTOLUENE	LT	0.74400			
EGV	24DNT	2,4-DINITROTOLUENE	LT	0.74400			
EGU	24DNT	2,4-DINITROTOLUENE	LT	1.16000			
EGT	24DNT	2,4-DINITROTOLUENE	LT	0.74400			
EGP	24DNT	2,4-DINITROTOLUENE	LT	0.74400			
EGH	26DNT	2,6-DINITROTOLUENE	LT	0.83000			
EGG	26DNT	2,6-DINITROTOLUENE	LT	0.83000	μg/g		
EGF	26DNT	2,6-DINITROTOLUENE	LT	0.83000	μg/g		
EGE	26DNT	2,6-DINITROTOLUENE	LT	0.83000	μg/g		
EGV	26DNT	2,6-DINITROTOLUENE	LT	0.83000	μg/g		
EGU	26DNT	2,6-DINITROTOLUENE	LT	1.11000	μg/l		
EGT	26DNT	2,6-DINITROTOLUENE	LT	0.83000	μg/g		
EGP	26DNT	2,6-DINITROTOLUENE	LT	0.83000	μg/g		
EGL	26DNT	2,6-DINITROTOLUENE	LT	1.11000	μg/l		•
GK	26DNT	2,6-DINITROTOLUENE	LT	0.83000	μg/g		
GJ	26DNT	2,6-DINITROTOLUENE	LT	0.83000			
GI	26DNT	2,6-DINITROTOLUENE	LT	0.83000			
GE	2NT	2-NITROTOLUENE	LT	1.59000			
GH	2NT	2-NITROTOLUENE	LT	1.59000			
GI	2NT	2-NITROTOLUENE	LT	1.59000			
GG	2NT	2-NITROTOLUENE	LT	1.59000			
GF	2NT	2-NTROTOLUENE	LT	1.59000			
	2NT	2-NITROTOLUENE 2-NITROTOLUENE	LT	1.59000			
EGJ		2-NITROTOLUENE	LT	1.59000			
GP	2NT		LT	1.59000			
GK	2NT	2-NITROTOLUENE	LT	1.59000			
GV	2NT	2-NITROTOLUENE					
GT	2NT	2-NITROTOLUENE	LT	1.59000			
GE	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.75500			
GF	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.75500			
GG	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.75500			
GH	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.75500			
:GI	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.75500			
EGJ	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.75500			
GK	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.75500	μg/g		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: EX	PLOSIVES					
EGL	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.86900	μg/i		
EGP	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.75500			
EGT	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.75500			
EGU	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.86900			
EGV	HMX	CYCLOTETRAMETHYLENETETRANITRAMINE	LT	0.75500			
EGE	NB	NITROBENZENE	LT	1.04000			
EGF	NB	NITROBENZENE	LT	1.04000			
EGG	NB	NITROBENZENE	LT	1.04000			
EGH	NB	NITROBENZENE	LT	1.04000			
EGI	NB	NITROBENZENE	LT	1.04000			
EGJ	NB	NITROBENZENE	LT	1.04000			
EGK	NB	NITROBENZENE	LT	1.04000	μg/g		
EGL	NB	NITROBENZENE	LT	1.54000	μg/l		
EGP	NB	NITROBENZENE	LT	1.04000	μg/g		
EGT	NB	NITROBENZENE	LT	1.04000	μg/g		
EGU	NB	NITROBENZENE	LT	1.54000	μg/l		
EGV	NB	NITROBENZENE	LT	1.04000	μg/g		
SKM	NB	NITROBENZENE	ND	0.33000	μg/g	R	
SKN	NB	NITROBENZENE	ND	0.33000	μg/g	R	
EGE	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.44500	μg/g		
EGF	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.44500	μg/g		
EGG	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.44500	μg/g		
EGH	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.44500	μg/g		
EGI	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.44500	μg/g		
EGJ	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.44500	μg/g		
EGK	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.44500	μg/g		
EGL	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.61700	μg/l		
EGP	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.44500	μg/g		
EGT	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.44500	μg/g		
EGU	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.61700	μg/l		
EGV	RDX	CYCLOTRIMETHYLENETRINITRAMINE	LT	0.44500	μg/g		
EGE	TETRYL	N-METHYL-N2.4.6-TETRANITROANILINE	LT	1.04000	μg/g		
EGF	TETRYL	N-METHYL-N2,4,6-TETRANITROANILINE	LT	1.04000	μg/g		
EGG	TETRYL	N-METHYL-N2,4,6-TETRANITROANILINE	LT	1.04000	μg/g		
EGH	TETRYL	N-METHYL-N2,4,6-TETRANITROANILINE	LT	1.04000	μg/g		
EGI	TETRYL	N-METHYL-N2,4,6-TETRANITROANILINE	LT	1.04000	μg/g		
EGJ	TETRYL	N-METHYL-N2,4,6-TETRANITROANILINE	LT	1.04000	μg/g		
EGK	TETRYL	N-METHYL-N2.4,6-TETRANITROANILINE	LT	1.04000	μg/g		
EGL	TETRYL	N-METHYL-N2,4,6-TETRANITROANILINE	LT	0.19100	μg/l		
EGP	TETRYL	N-METHYL-N2,4,6-TETRANITROANILINE	LT	1.04000	μg/g		
EGT	TETRYL	N-METHYL-N2,4,6-TETRANITROANILINE	LT	1.04000	μg/g		
EGU	TETRYL	N-METHYL-N2.4.6-TETRANITROANILINE	LT	0.19100	μg/l		
EGV	TETRYL	N-METHYL-N2.4.6-TETRANITROANILINE	LT	1.04000	μg/g		
Chemical	Class: ME	TALS					
FOB	AG	SILVER	LT	0.01500	μg/g		
FOG	AG	SILVER	LT	0.01500			
FPE	AG ;	SILVER	LT	0.01500			
FPI	AG	SILVER	LT	0.01500			
MFV	AG	SILVER	LT	32.00000			
FPK	AG	SILVER	LT	0.31600			
MFW	AG	SILVER	LT	32.00000			
FPG	AG	SILVER	LT	0.01500			

Lot		Test Name		Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class	METALS						
FPA	AG	SILVER		LT	0.01500	μg/g		
MFW	AS	ARSENIC		LT	43.80000			
MFV	AS	ARSENIC		LT	43.80000			
MFU	AS	ARSENIC		LT	24.00000	. •		
MFT		ARSENIC		LT	24.00000	μg/g		
	AS			LT	24.00000	μg/g		
MFS	AS	ARSENIC		LT	24.00000			
MFR	AS	ARSENIC ARSENIC		LT	24.00000			
MFP	AS			LT	24.00000			
MFQ	AS	ARSENIC		LT	24.00000			
MFK	AS	ARSENIC						
MFK	BA	BARIUM		LT	2.61000	μg/g		
MFQ	BA	BARIUM		LT	2.61000	μg/g		
MFS	BA	BARIUM		LT	2.61000	μg/g		
MFT	BA	BARIUM		LT	2.61000	μg/g		
MFR	BA	BARIUM		LT	2.61000	μg/g		
MFP	BA	BARIUM		LT	2.61000	μg/g		
MFU	BA	BARIUM		LT	2.61000	μ <b>g</b> /g		
MFW	BA	BARIUM		LT	1.52000	μg/l		
MFV	BA	BARIUM		LT	1.52000	μg/l		
MFQ	BE	BERYLLIUM		LT ·	0.07800	μg/g		
MFP	BE	BERYLLIUM		LT	0.07800	μ <b>g</b> /g		
MFR	BE	BERYLLIUM		LT	0.07800	µg/g		
MFT	BE	BERYLLIUM		LT	0.07800	μg/g		4
MFV	BE	BERYLLIUM		LT	0.34100	μg/l		1
MFU	BE	BERYLLIUM		LT	0.07800	μg/g		
MFS	BE	BERYLLIUM		LT	0.07800	µg/g		
MFK.	BE	BERYLLIUM		LT	0.07800	μg/g		
MFK	CD	CADMIUM		LT	0.42400	μg/g		
MFQ	CD	CADMIUM		LT	0.42400	μg/g		
MFP	CD	CADMIUM		LT	0.42400	μg/g		
MFR	CD	CADMIUM		LT	0.42400	μg/g		
MFT	CD	CADMIUM		LT	0.42400	μg/g		
MFS	CD	CADMIUM		LT	0.42400	μg/g		
MFW	CD	CADMIUM		LT	2.67000	μg/l		
MFV	CD	CADMIUM		LT	2.67000	μg/l		
MFU	CD	CADMIUM		LT	0.42400	μg/g		
MFQ	CR	CHROMIUM		LT	3.90000	μg/g		
MFU	CR	CHROMIUM		LT	3.90000	μg/g		
MFW	CR	CHROMIUM		LT	4.47000	μg/l		
MFV	CR	CHROMIUM		LT	4.47000	μg/l		
MFT	CR	CHROMIUM		LT	3.90000	μg/g		
MFP	CR	CHROMIUM		LT	3.90000	μg/g		
MFR	CR	CHROMIUM		LT	3.90000	μg/g		
MFS	CR	CHROMIUM		LT	3.90000	μg/g		
MFK	CR	CHROMIUM		LT	3.90000	μg/g		
MFK	CU	COPPER		LT	1.95000	μg/g		
MFQ	CU	COPPER		LT	1.95000	μg/g		
MFV	CU	COPPER		LT	4.29000	μg/l		
MFU	CU	COPPER		LT		μg/g		
MFP	CU	COPPER		LT	1.95000	μg/g		
MFR	CU	COPPER	,	LT	1.95000	μg/g		4
MFS	CU	COPPER		LT	1.95000	μg/g		
				LT	1.95000			•
MFT	CU	COPPER		. DI	1.75000	488		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot		Test Name	Meas Bool Value	Unit Meas	Flag Code	Data Qual
Chemical	Class:	METALS				
MFP	FE	IRON	LT 1.89000	μg/g		
MFR	FE	IRON	3.58000	μg/g		
MFS	FE	IRON	LT 1.89000	μg/g		
MFT	FE	IRON	LT 1.89000	μg/g		
MFU	FE	IRON	LT 1.89000			
MFV	FE	IRON	LT 24.60000	μg/l		
MFQ	FE	IRON	LT 1.89000	μg/g		
MFK	FE	IRON	LT 1.89000	μg/g		
DEL	HG	MERCURY	LT 0.02600	μg/g		
DEM	HG	MERCURY	0.68200	μg/i		
DEN	HG	MERCURY	LT 0.56600	μg/l		
DEO	HG	MERCURY	LT 0.02600			
DEP	HG	MERCURY	LT 0.02600	μg/g		
		MERCURY		μg/g		
DEQ	HG		LT 0.02600	μg/g		
DET	HG	MERCURY	LT 0.02600	μg/g		
DEU DEV	HG	MERCURY	LT 0.56600	μg/l		
	HG	MERCURY	LT 0.02600	μg/g		
MFP	NI	NICKEL	LT 2.46000	μg/g		
MFR	NI	NICKEL	LT 2.46000	μg/g		
MFS	NI	NICKEL	LT 2.46000	μg/g		
MFT	NI	NICKEL	LT 2.46000	μg/g		
MFU	NI	NICKEL	LT 2.46000	μg/g		
MFV	NI	NICKEL	LT 8.76000	μg/l		
MFQ	NI	NICKEL	LT 2.46000	μg/g		
MFK	NI	NICKEL	LT 2.46000	μg/g		
FNZ	PB	LEAD	LT 0.31900	μg/g		
FOH	PB	LEAD	LT 0.31900	μg/g		
FPB	PB	LEAD	LT 0.31900	μg/g		
FPD	PB	LEAD	LT 4.74000	μg/l		
FPF	PB	LEAD	LT 0.31900	μg/g		
FPL	PB	LEAD	LT 0.31900	μg/g		
MFV	PB	LEAD	LT 40.60000	μg/l		
MFW	PB	LEAD	LT 40.60000	μg/l		
MFQ	SB	ANTIMONY		μg/g		
MFP	SB	ANTIMONY		μg/g		
MFR	SB	ANTIMONY	LT 3.42000			
MFS	SB	ANTIMONY		μg/g		
MFT	SB	ANTIMONY		μg/g		
MFU	SB	ANTIMONY		μg/g		
MFV	SB	ANTIMONY		μg/l		
MFK	SB	ANTIMONY		μg/g		
MFK	SE	SELENIUM		μg/g μg/g		
MFP	SE	SELENIUM				
MFR	SE	SELENIUM		μg/g		
MFS	SE	SELENIUM		μg/g		
MFT	SE	SELENIUM		μg/g		
				μg/g		
MFU	SE	SELENIUM SELENIUM		μg/g		
MFV	SE	SELENTIM		μg/l		
MFW	SE	SELENIUM		μg/l		
MFQ	SE	SELENIUM		μg/g		
MFP	TL	THALLIUM		μg/g		
MFR	TL	THALLIUM		μg/g		
MFS	TL	THALLIUM	LT 16.60000	μg/g		

Lot	Tes	rt Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: ME	TALS					
MFT	TL	THALLIUM	LT	16.60000	μg/g		
MFU	TL	THALLIUM	LT	16.60000	µg/g		
MFV	TL	THALLIUM	LT	114.00000	μg/I		
MFQ	TL	THALLIUM	LT	16.60000	μg/g		
MFK	TL	THALLIUM	LT	16.60000	μg/g		
MFP	ZN	ZINC	LT	7.96000	µg/g		
MFR	ZN	ZINC	LT	7.96000	μg/g		
MFS	ZN	ZINC	LT	7.96000	µg/g		
MFT	ZN	ZINC	LT	7.96000	μg/g		
MFU	ZN	ZINC	LT	7.96000			
		ZINC	LT	19.40000			
MFV	ZN		LT	7.96000	μg/g		
MFQ	ZN	ZINC	LT	7.96000			
MFK	ZN	ZINC	£.	7.50000	ros		
Chemical	Class: PE	STICIDES					
CDX	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.00500			
CDX	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.00500			
CDY	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.00600	μg/l		
CEE	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.00500	μg/g		
CEF	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.00600	μg/l	•	
CEF	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.00600	μg/l		
SKN	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
SKM	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
CEE	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.00500	μg/g		
CDY	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.00600	μg/l		
CEF	ACLDA	ALPHA CHLORDANE	LT	0.00200	μg/l		
CEE	ACLDA	ALPHA CHLORDANE	LT	0.00200	µg/g		
SKN	ACLDA	ALPHA CHLORDANE	ND	1.00000	μg/g	R	
SKM	ACLDA	ALPHA CHLORDANE	ND	1.00000	μg/g	R	
CDX	ACLDA	ALPHA CHLORDANE	LT	0.00200			
CDY	ACLDA	ALPHA CHLORDANE	LT	0.00200			
		ALPHA CHLORDANE	LT	0.00200			
CEE	ACLDA	ALPHA CHLORDANE	LT	0.00200			
CDX	ACLDA		ND	0.05000		T	
CEF		ALPHA-ENDOSULFAN	ND	0.05000	μg/l	T	
CEF		ALPHA-ENDOSULFAN	ND	0.00800		T	
CEE		ALPHA-ENDOSULFAN	ND	0.00800		T	
CEE		ALPHA-ENDOSULFAN	ND	0.05000		T	
CDY		ALPHA-ENDOSULFAN	ND	0.05000		T	
CDY		ALPHA-ENDOSULFAN	ND	1.00000		R	
SKN		ALPHA-ENDOSULFAN	ND	1.00000		R	
SKM		ALPHA-ENDOSULFAN	LT	0.00800			
CDX		ALPHA-ENDOSULFAN	LT	0.00800			
CDX		ALPHA-ENDOSULFAN	ND	0.05000		т	
CDY	ALDRN	ALDRIN	LT	0.03000		•	
CEE	ALDRN	ALDRIN		0.05000		т	
CEF	ALDRN	ALDRIN	ND				
SKN	ALDRN	ALDRIN	LT	0.29000			
SKM	ALDRN	ALDRIN	LT	0.29000		•	
CEF	ALDRN	ALDRIN .	ND	0.05000		T	
CDY	ALDRN	ALDRIN	ND	0.05000		T	
CDX	ALDRN	ALDRIN	LT	0.00800			
CDX	ввнс	BETA-BENZENEHEXACHLORIDE	LT	0.00800			'
	ввнс	BETA-BENZENEHEXACHLORIDE	LT	0.00800	μg/g		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Tes	rt Name	Meas Bool	Value	Unit Meas	Fiag Code	Data Qual
Chemical	Class: PE	STICIDES					
CDY	BBHC	BETA-BENZENEHEXACHLORIDE	ND	0.05000	μg/l	Т	
CEE	BBHC	BETA-BENZENEHEXACHLORIDE	ND	0.00800		T	
CEF	BBHC	BETA-BENZENEHEXACHLORIDE	ND	0.05000	μg/l	Т	
CEF	BBHC	BETA-BENZENEHEXACHLORIDE	ND	0.05000		T	
SKN	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000			
SKM	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000			
CEE	BBHC	BETA-BENZENEHEXACHLORIDE	ND	0.00800		Т	
CDY	BBHC	BETA-BENZENEHEXACHLORIDE	ND	0.05000		Т	
CDX		BETA-ENDOSULFAN	LT	0.01600			
CDY		BETA-ENDOSULFAN	ND	0.10000		T	
CEE		BETA-ENDOSULFAN	ND	0.01600		Т	
CEF		BETA-ENDOSULFAN	ND	0.10000		T	
SKN		BETA-ENDOSULFAN	ND	0.20000		R	
SKM		BETA-ENDOSULFAN	ND	0.20000		R	
CEF		BETA-ENDOSULFAN	ND	0.10000		T	
CEE		BETA-ENDOSULFAN	ND	0.01600		Ť	
CDY		BETA-ENDOSULFAN	ND	0.10000		T	
CDX		BETA-ENDOSULFAN	LT	0.01600	. •	•	
CDY	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.03700			
		.=		0.03700			
CDY	DBHC	DELTA-BENZENEHEXACHLORIDE	LT LT	0.03700			
CEE	DBHC	DELTA-BENZENEHEXACHLORIDE					
CEE	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.00500			
CEF	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.03700			
CEF	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.03700	. •		
CDX	DLDRN	DIELDRIN	LT	0.00500			
CDY	DLDRN	DIELDRIN	LT	0.02200			
CEE	DLDRN	DIELDRIN	LT	0.00500	μg/g		
CEF	DLDRN	DIELDRIN	LT	0.02200	μg/l		
SKM	DLDRN		LT	0.30000	μg/g		
SKN		DIELDRIN	LT	0.30000	μg/g		
CDX	ENDRN		LT	0.00800	μg/g		
CDY	ENDRN	ENDRIN	LT	0.00800	μg/l		
CEE	ENDRN	ENDRIN	LT	0.00800	μg/g		
CEF	ENDRN	ENDRIN	LT	0.00800	μg/l		
SKM	ENDRN	ENDRIN	LT	0.41000	μg/g		
SKN	ENDRN	ENDRIN	LT	0.41000	μg/g		
CDX	ENDRN	ENDRIN ALDEHYDE	LT	0.01600	μg/g		
CDX	ENDRN	ENDRIN ALDEHYDE	LT	0.01600	μg/g		
CDY	ENDRN	ENDRIN ALDEHYDE	ND	0.10000	μg/l	T	
CDY	ENDRN	ENDRIN ALDEHYDE	ND	0.10000	μg/l	T	
CEE	<b>ENDRN</b>	ENDRIN ALDEHYDE	ND	0.01600	μg/g	T	
CEE	ENDRN	ENDRIN ALDEHYDE	ND	0.01600	μg/g	T	
CEF	<b>ENDRN</b>	ENDRIN ALDEHYDE	ND	0.10000	μg/l	T	
CEF	ENDRN	ENDRIN ALDEHYDE	ND	0.10000	μg/l	- <b>T</b>	
CDY	ENDRN	ENDRIN KETONE	ND	0.10000	μg/l	T	
CDY	ENDRN	ENDRIN KETONE	ND	0.10000	μg/l	T	
CEE	ENDRN	ENDRIN KETONE	ND	0.01600	μg/g	T	
CEE	ENDRN	ENDRIN KETONE	ND	0.01600	μg/g	T	
CEF	ENDRN	ENDRIN KETONE	ND	0.10000	μg/l	T	
CEF	ENDRN	ENDRIN KETONE	ND	0.10000	μg/l	T	
CDX	ESFSO4	ENDOSULFAN SULFATE	LT	0.01600			
CDX	ESFSO4	ENDOSULFAN SULFATE	LT	0.01600	μg/g		
	-W. DO-7	ENDOSULFAN SULFATE	ND	0.10000		T	

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: PE	STICIDES					
CDY	ESFSO4	<u></u>	ND	0.10000	μg/l	T	
CEE	ESFSO4	ENDOSULFAN SULFATE	ND	0.01600	μg/g	T	
CEE	ESFSO4	ENDOSULFAN SULFATE	ND	0.01600	μg/g	T	
CEF	ESFSO4	ENDOSULFAN SULFATE	ND	0.10000	μg/l	T	
CEF	ESFSO4	ENDOSULFAN SULFATE	ND	0.10000	μg/l	T	
SKM	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SKN	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000		R	
CDX	GCLDA	GAMMA-CHLORDANE	LT	0.00400			
CDY	GCLDA	GAMMA-CHLORDANE	LT	0.03100			
CDY	GCLDA	GAMMA-CHLORDANE	LT	0.03100			
CEE	GCLDA	GAMMA-CHLORDANE	LT	0.00400			
CEF	GCLDA	GAMMA-CHLORDANE	LT	0.03100			
CEF	GCLDA	GAMMA-CHLORDANE	LT	0.03100	μg/l		
		GAMMA-CHLORDANE	ND	5.00000	μg/g	R	
SKM	GCLDA	GAMMA-CHLORDANE GAMMA-CHLORDANE	ND	5.00000	μg/g	R	
SKN	GCLDA		ND	0.00200		U	
CDX	HPCL	HEPTACHLOR	LT	0.00200		O	
CDY	HPCL	HEPTACHLOR	LT	0.00100			
CEE	HPCL	HEPTACHLOR		0.00100			
CEF	HPCL	HEPTACHLOR	LT LT	0.28000	μg/l		
SKM	HPCL	HEPTACHLOR		0.28000	μg/g		
SKN	HPCL	HEPTACHLOR	LT	0.00400	μg/g		
CDX	HPCLE	HEPTACHLOREPOXIDE	LT		μg/g		
CDX	HPCLE	HEPTACHLOREPOXIDE	LT	0.00400 0.06100			1
CDY	HPCLE	HEPTACHLOREPOXIDE	LT	0.06100	μg/i		•
CDY	HPCLE	HEPTACHLOREPOXIDE	LT		μg/l		
CEE	HPCLE	HEPTACHLOREPOXIDE	LT	0.00400	μg/g		
CEE	HPCLE	HEPTACHLOREPOXIDE	LT	0.00400	μg/g		
CEF	HPCLE	HEPTACHLOREPOXIDE	LT	0.06100	μg/l		
CEF	HPCLE	HEPTACHLOREPOXIDE	LT	0.06100	μg/l		
SKM	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
SKN	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
CDX	ISODR	ISODRIN	LT	0.00800	μ <b>g</b> /g		
CDX	ISODR	ISODRIN	LT	0.00800	μg/g		
CDY	ISODR	ISODRIN	LT	0.13400	μg/l		
CDY	ISODR	ISODRIN	LT	0.13400	μg/l		
CEE	ISODR	ISODRIN	LT	0.00800			
CEE	ISODR	ISODRIN	LT	0.00800			
CEF	ISODR	ISODRIN	LT	0.13400	μg/l		
CEF	ISODR	ISODRIN	LT	0.13400	μg/l		
CDX	LIN	LINDANE	LT	0.00500	μg/g		
CDY	LIN	LINDANE	LT	0.03300	μg/l		
CEE	LIN	LINDANE	LT	0.00500	μg/g		
CEF	LIN	LINDANE	LT	0.03300	μg/l		
SKM	LIN	LINDANE	LT	0.43000	μg/g		
SKN	LIN	LINDANE	LT	0.43000	μ <b>g</b> /g		
CDX	MEXCL	METHOXYCHLOR	LT	0.08000	μg/g		
CDX	MEXCL	METHOXYCHLOR	LT	0.08000	μg/g		
CDY	MEXCL	METHOXYCHLOR	ND	0.50000	μg/l	T	
CDY	MEXCL	METHOXYCHLOR	ND	0.50000	μg/l	T	
CEE	MEXCL	METHOXYCHLOR	ND		μg/g	Т	
CEE	MEXCL	METHOXYCHLOR	ND	0.08000	μg/g	Т	4
CEF	MEXCL	METHOXYCHLOR	ND	0.50000	μg/l	T	1
CDI	MINACE	METHOXYCHLOR	ND	0.50000		T	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	est Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: PE	ESTICIDES					
SKM		METHOXYCHLOR	ND	1.00000	μg/g	R	
SKN	MEXCL	METHOXYCHLOR	ND	1.00000	μg/g	R	
CDY	PCB016	PCB 1016	LT	0.06800	μg/l	-	
CEE	PCB016	PCB 1016	LT	0.07000	μg/g		
CEF	PCB016	PCB 1016	LT	0.06800	μg/l		
CDY	PCB260	PCB 1260	LT	0.07500	μg/l		
CEE	PCB260	PCB 1260	LT	0.05400	μg/g		
CEF	PCB260	PCB 1260	LT	0.07500	μg/l		
CDX	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.01000	μg/g		
CDY	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.02000	μg/l		
CEE	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.01000	μg/g		
CEF	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.02000	μg/l		
SKM	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SKN	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
CDX	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.00400	μg/g		
CDX	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.00400	μ <b>g</b> /g		
CDY	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT .	0.08800	μg/l		
CDY	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.08800	μg/i		
CEE	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.00400	μg/g		
CEE	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.00400	μg/g		
CEF	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.08800	μg/l		
CEF	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.08800	μg/l		
SKM	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g		
SKN	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g		
CDX	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	υ.	0.12100	μg/g	U	
CDX	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE		0.15100	μg/g	Ü	
CDY	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	ND	0.10000	μg/l	T	
CDY	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	ND	0.10000	μg/l	T	
CEE	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	ND	0.01600	μg/g	T	
CEE	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	ND	0.01600	μg/g	T	
CEF	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	ND	0.10000	μg/l	Ť	
CEF	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	ND	0.10000	μg/l	T	
SKM	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	0.41000	μg/g	•	
SKN	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	0.41000	μg/g		
CDY	TXPHE	TOXAPHENE	ND	1.00000	μg/l	Т	
CDY	TXPHE	TOXAPHENE	ND		μg/l	T	
CEE	TXPHE	TOXAPHENE	ND	0.16000		T	
CEE	TXPHE	TOXAPHENE	ND	0.16000		Т	
CEF	TXPHE	TOXAPHENE	ND		μg/l	T	
CEF	TXPHE	TOXAPHENE	ND	1.00000		T	
Chemical (	Class: SE	MIVOLATILES					
SJV	123TCB	1,2,3-TRICHLOROBENZENE	LT	0.29000	μg/g		
SJX		1,2,3-TRICHLOROBENZENE	LT		μg/g		
SKB		1,2,3-TRICHLOROBENZENE	LT		μg/g		
SJZ		1,2,3-TRICHLOROBENZENE	LT		μg/g		
SKP		1,2,3-TRICHLOROBENZENE	LT		μg/g		
SKO		1,2,3-TRICHLOROBENZENE	LT		re/s μg/l		
SKN		1,2,3-TRICHLOROBENZENE	LT		μg/g		
SKM		1,2,3-TRICHLOROBENZENE	LT		μg/g		
SKK	123TCB	1,2,3-TRICHLOROBENZENE	LT .		μg/g		
SKJ	123TCB	1,2,3-TRICHLOROBENZENE	LT		με∕ε με⁄ε		
	123TCB	1,2,3-TRICHLOROBENZENE	LT	0.29000			

Lot	Test Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SEMIVOLATILES					
SKE	123TCB 1,2,3-TRICHLOROBENZENE	LT	0.29000	μg/g		
SKD	123TCB 1,2,3-TRICHLOROBENZENE	LT	0.29000	μg/g		
SKC	123TCB 1,2,3-TRICHLOROBENZENE	LT	0.29000	μg/g		
SJW	123TCB 1,2,3-TRICHLOROBENZENE	LT	3.60000	μg/l		
SJU	123TCB 1,2,3-TRICHLOROBENZENE	LT	0.29000	μg/g		
SJT	123TCB 1,2,3-TRICHLOROBENZENE	LT	0.29000	μ <b>g</b> /g		
SJW	124TCB 1,2,4-TRICHLOROBENZENE	LT	2.80000	μg/l		
SJZ	124TCB 1,2,4-TRICHLOROBENZENE	LT	0.29000	μg/g		
SKC	124TCB 1,2,4-TRICHLOROBENZENE	LT	0.29000			
SKB	124TCB 1,2,4-TRICHLOROBENZENE	LT	0.29000			
SKP	124TCB 1,2,4-TRICHLOROBENZENE	LT	0.29000	μg/g		
		LT	2.80000	μg/l		
SKO		LT	0.29000		•	
SKN	124TCB 1,2,4-TRICHLOROBENZENE	LT	0.29000			
SKM	124TCB 1,2,4-TRICHLOROBENZENE	LT	0.29000	μg/g μg/g		
SKK	124TCB 1,2,4-TRICHLOROBENZENE	LT	0.29000			
SKJ	124TCB 1,2,4-TRICHLOROBENZENE	LT LT	0.29000	μg/g		
SKF	124TCB 1,2,4-TRICHLOROBENZENE		0.29000	μg/g		
SKE	124TCB 1,2,4-TRICHLOROBENZENE	LT LT	0.29000	μg/g		
SKD	124TCB 1,2,4-TRICHLOROBENZENE			μg/g		
SJX	124TCB 1,2,4-TRICHLOROBENZENE	LT	0.29000	μg/g		
SJV	124TCB 1,2,4-TRICHLOROBENZENE	LT	0.29000	μg/g		
SJT	124TCB 1,2,4-TRICHLOROBENZENE	LT	0.29000	μg/g		
SJU	124TCB 1,2,4-TRICHLOROBENZENE	LT	0.29000	μg/g		
SKN	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000	μg/g		
SKM	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000			
SKK	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000	μg/g		
SKJ	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000	μg/g		
SKF	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000	μg/g		
SKE	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000			
SKD	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000	μg/g		
SKC	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000	μg/g		
SKP	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000			
SKO	12DCLB 1,2-DICHLOROBENZENE	LT	10.00000			
SKB	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000			
SJZ	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000			
SJX	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000			
SJW	12DCLB 1,2-DICHLOROBENZENE	LT	10.00000			
SJV	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000			
SJU	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000	μg/g		
SJT	12DCLB 1,2-DICHLOROBENZENE	LT	0.33000	μg/g		
SJW	13DCLB 1,3-DICHLOROBENZENE	LT	8.50000			
SJZ	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000			
SKC	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000			
SKB	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000	μg/g		
SKP	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000	μg/g		
SKO	13DCLB 1,3-DICHLOROBENZENE	LT	8.50000	μg/l		
SKN	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000	μg/g		
SKM	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000	μg/g		
	· · · · · · · · · · · · · · · · · · ·	LT	0.33000			
SKK	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000	μg/g		
SKJ	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000			
SKF	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000	μg/g		
SKE	13DCLB 1,3-DICHLOROBENZENE			μg/g		
SKD	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000	μg/g		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Test Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SEMIVOLATILES					
SJX	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000	μg/g		
SJV	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000			
SJT	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000			
SJU	13DCLB 1,3-DICHLOROBENZENE	LT	0.33000			
SJU	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000	μg/g		
SJW	14DCLB 1,4-DICHLOROBENZENE	LT	4.40000	μg/l		
SJZ	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000	μg/g		
SKC	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000	μg/g		
SKE	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000	μg/g		
SKJ	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000	⊬в⁄в µg/g		
SKF	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000			
SKP	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000	μg/g		
SKO	14DCLB 1,4-DICHLOROBENZENE	LT	4.40000	μg/g		
SKN	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000	μg/l		
SKM	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000	μg/g		
SKK	14DCLB 1,4-DICHLOROBENZENE	LT				
SKD	14DCLB 1,4-DICHLOROBENZENE		0.32000			
SKB	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000			
SJX	14DCLB 1,4-DICHLOROBENZENE	LT LT	0.32000			
SJV	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000			
SJT	14DCLB 1,4-DICHLOROBENZENE	LT	0.32000			
SKJ	245TCP 2,4,5-TRICHLOROPHENOL		0.32000			
SKF	245TCP 2,4,5-TRICHLOROPHENOL	ND	1.70000	μg/g	R	
SKE	245TCP 2,4,5-TRICHLOROPHENOL	ND	1.70000		R	
SKD	245TCP 2,4,5-TRICHLOROPHENOL	ND	1.70000		R	
SKC	245TCP 2,4,5-TRICHLOROPHENOL	ND	1.70000		R	
SKB	245TCP 2,4,5-TRICHLOROPHENOL	ND	1.70000		R	
SJZ	245TCP 2,4,5-TRICHLOROPHENOL	ND		μg/g	R	
SJX	, ,	ND	1.70000	μg/g	R	
SKP	245TCP 2,4,5-TRICHLOROPHENOL 245TCP 2,4,5-TRICHLOROPHENOL	ND		μg/g	R	
SKO		ND		μg/g	R	
SKN	245TCP 2,4,5-TRICHLOROPHENOL	ND		μg/l	R	
SKM	245TCP 2,4,5-TRICHLOROPHENOL	ND	1.70000		R	
	245TCP 2,4,5-TRICHLOROPHENOL	ND		μg/g	R	
SKK	245TCP 2,4,5-TRICHLOROPHENOL	ND		μg/g	R	
SJW	245TCP 2,4,5-TRICHLOROPHENOL	ND		μg/l	R	
SJV	245TCP 2,4,5-TRICHLOROPHENOL	ND	1.70000		R	
SJU	245TCP 2,4,5-TRICHLOROPHENOL	ND	1.70000		R	
SJT	245TCP 2,4,5-TRICHLOROPHENOL	ND		μg/g	R	
SJV	246TCP 2,4,6-TRICHLOROPHENOL	ND		μg/g	R	
SJX	246TCP 2.4.6-TRICHLOROPHENOL	ND		μg/g	R	
SKB	246TCP 2.4.6-TRICHLOROPHENOL	ND		μg/g	R	
SKD	246TCP 2,4,6-TRICHLOROPHENOL	ND		μg/g	R	
SKF	246TCP 2.4.6-TRICHLOROPHENOL	ND		μg/g	R	
SKE	246TCP 2.4,6-TRICHLOROPHENOL	ND		μg/g	R	
SKP	246TCP 2.4,6-TRICHLOROPHENOL	ND		μg/g	R	
SKO	246TCP 2.4.6-TRICHLOROPHENOL	ND		μg/l	R	
SKN	246TCP 2,4,6-TRICHLOROPHENOL	ND		μg/g	R	
SKM	246TCP 2,4,6-TRICHLOROPHENOL	ND		μg/g	R	
SKK	246TCP 2,4,6-TRICHLOROPHENOL	ND		μg/g	R	
SKJ	246TCP 2,4,6-TRICHLOROPHENOL	ND		μg/g	R	
SKC	246TCP 2,4,6-TRICHLOROPHENOL	ND	0.30000		R	
SJZ	246TCP 2,4,6-TRICHLOROPHENOL	ND	0.30000		R	
SJW	246TCP 2,4,6-TRICHLOROPHENOL	ND	10.00000		R	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SJU	246TCP		ND	0.30000	μg/g	R	
SJT	246TCP	2,4,6-TRICHLOROPHENOL	ND	0.30000	μg/g	R	
SKC	24DCLP		ND	0.33000	μg/g	R	
SKB	24DCLP	-	ND	0.33000		R	
SKP	24DCLP	2,4-DICHLOROPHENOL	ND	0.33000		R	
KO		2,4-DICHLOROPHENOL	ND	10.00000		R	
KN	24DCLP	2,4-DICHLOROPHENOL	ND	0.33000		R	
KM	24DCLP	2,4-DICHLOROPHENOL	ND	0.33000		R	
KK	24DCLP	2,4-DICHLOROPHENOL	ND	0.33000		R	
KJ	24DCLP	2,4-DICHLOROPHENOL	ND	0.33000		R	
		2,4-DICHLOROPHENOL	ND	0.33000		R	
KF	24DCLP	•	ND	0.33000		R	
KE	24DCLP	2,4-DICHLOROPHENOL	ND	0.33000		R	
KD	24DCLP	2,4-DICHLOROPHENOL		0.33000		R	
JU	24DCLP	2,4-DICHLOROPHENOL	ND				
JW	24DCLP	2,4-DICHLOROPHENOL	ND	10.00000	. •	R	
JX	24DCLP	2,4-DICHLOROPHENOL	ND	0.33000		R	
JZ	24DCLP	2,4-DICHLOROPHENOL	ND	0.33000		R	
JV	24DCLP	2,4-DICHLOROPHENOL	ND	0.33000		R	
Л	24DCLP	2,4-DICHLOROPHENOL	ND	0.33000		R	
KJ	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000		R	
KF	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000	μg/g	R	
KE	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000	μg/g	R	
KD	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000		R	
KC	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000		R	
KB	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000	μ <b>g</b> /g	R	
JZ	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000	μg/g	R	
JХ	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000	μg/g	R	
KP	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000	μg/g	R	
ко	24DMP	2.4-DIMETHYLPHENOL	ND	10.00000	μg/l	R	
KN	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000	μg/g	R	
KM	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000	μg/g	R	
KK	24DMP	2.4-DIMETHYLPHENOL	ND	0.33000	μg/g	R	
JW	24DMP	2.4-DIMETHYLPHENOL	ND	10.00000		R	
JV	24DMP	2,4-DIMETHYLPHENOL	ND	0.33000		R	
TU	24DMP	2.4-DIMETHYLPHENOL	ND	0.33000		R	
Л	24DMP	2.4-DIMETHYLPHENOL	ND	0.33000		R	
Л	24DMP	2,4-DINITROPHENOL	ND	1.70000		R	
λ γ	24DNP 24DNP	2.4-DINTROPHENOL	ND	1.70000		R	
		2,4-DINITROPHENOL	ND	1.70000	μg/g	R	
JX v D	24DNP	•	ND	1.70000	μg/g	R	
KB	24DNP	2.4-DINITROPHENOL	ND	1.70000	μg/g	R	
KD	24DNP	2,4-DINITROPHENOL	ND	1.70000	μg/g	R	
KF	24DNP	2,4-DINITROPHENOL	ND ND	1.70000	μg/g	R	
KE	24DNP	2,4-DINITROPHENOL	ND ND	1.70000		R	
KP	24DNP	2,4-DINITROPHENOL		50.00000	μg/g	R	
КО	24DNP	2,4-DINITROPHENOL	ND		μg/l		
KN	24DNP	2,4-DINITROPHENOL	ND	1.70000	μg/g	R	
KM	24DNP	2,4-DINITROPHENOL	ND	1.70000	μg/g	R	
KK	24DNP	2,4-DINITROPHENOL	ND	1.70000	μg/g	R	
KJ	24DNP	2,4-DINITROPHENOL	ND	1.70000	μg/g	R	
KC	24DNP	2,4-DINITROPHENOL	ND	1.70000	μg/g	R	
JZ	24DNP	2,4-DINITROPHENOL	ND	1.70000	μ <b>g</b> /g	R	
JW	24DNP	2,4-DINITROPHENOL	ND	50.00000	μg/l	R	
JU	24DNP	2,4-DINITROPHENOL	ND	1.70000	μg/g	R	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Т	est Name	Meas Bool	Value	Unit Meas	Fiag Code	Data Qual
Chemica	l Class: S	EMIVOLATILES					
SKP	24DNT	2,4-DINITROTOLUENE	LT	0.39000	μg/g		
SKO	24DNT	2,4-DINITROTOLUENE	LT	5.50000			
SKN	24DNT	2,4-DINITROTOLUENE	LT	0.39000	μg/g		
SKM	24DNT	2.4-DINITROTOLUENE	LT	0.39000			
SKK	24DNT	2,4-DINITROTOLUENE	LT	0.39000			
SKJ	24DNT	2,4-DINITROTOLUENE	LT	0.39000			
SKF	24DNT	2,4-DINITROTOLUENE	LT	0.39000			
SKE	24DNT	2,4-DINITROTOLUENE	LT	0.39000	μg/g		
SKD	24DNT	2,4-DINITROTOLUENE	LT	0.39000	μg/g		
SKC	24DNT	2,4-DINITROTOLUENE	LT	0.39000	μg/g		
SKB	24DNT	2,4-DINITROTOLUENE	LT	0.39000	μg/g		
SJZ	24DNT	2,4-DINITROTOLUENE	LT	0.39000	μg/g		
SJX	24DNT	2,4-DINITROTOLUENE	LT	0.39000	μg/g		
SJW	24DNT	2,4-DINITROTOLUENE	LT	5.50000	μg/l		
SJV	24DNT	2,4-DINITROTOLUENE	LT	0.39000	μg/g		
SJU	24DNT	2,4-DINITROTOLUENE	LT	0.39000	μg/g		
SJT	24DNT	2,4-DINITROTOLUENE	LT	0.39000	μg/g		
SKC	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SKB	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SJZ	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SJX	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SJW	26DNT	2,6-DINITROTOLUENE	LT	6.60000	μg/l		
SJV	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
<b>SJ</b> U	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SJT	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SKP	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SKO	26DNT	2,6-DINITROTOLUENE	LT	6.60000	μg/l		
SKN	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SKM	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SKK	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SKJ	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SKF	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SKE	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
SKD	26DNT	2,6-DINITROTOLUENE	LT	0.53000	μg/g		
KP	2CLP	2-CHLOROPHENOL	ND	0.33000	μg/g	R	
SKO	2CLP	2-CHLOROPHENOL	ND	10.00000	μg/l	R	
KN	2CLP	2-CHLOROPHENOL	ND	0.33000	μg/g	R	
KM	2CLP	2-CHLOROPHENOL	ND	0.33000	μg/g	R	
KK	2CLP	2-CHLOROPHENOL	ND	0.33000	µg/g	R	
KJ	2CLP	2-CHLOROPHENOL	ND	0.33000	μg/g	R	
SKF	2CLP	2-CHLOROPHENOL	ND	0.33000	μg/g	R	
KE	2CLP.	2-CHLOROPHENOL	ND	0.33000	μg/g	R	
KD	2CLP	2-CHLOROPHENOL	ND	0.33000	μg/g	R	
KC	2CLP	2-CHLOROPHENOL	ND	0.33000	μ <b>g</b> /g	R	
KB	2CLP	2-CHLOROPHENOL	ND	0.33000	μg/g	R	
JU	2CLP	2-CHLOROPHENOL	ND	0.33000	μg/g	R	
JV	2CLP	2-CHLOROPHENOL	ND	0.33000	μg/g	R	
JW	2CLP	2-CHLOROPHENOL	ND	10.00000	μg/l	R	
JZ	2CLP	2-CHLOROPHENOL	ND	0.33000	μg/g	R	
JX	2CLP	2-CHLOROPHENOL	ND		μg/g	R	
Л	2CLP	2-CHLOROPHENOL	ND		μg/g	R	
KM	2CNAP	2-CHLORONAPHTHALENE	LT		μg/g		
KK	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000			

Lot	Tes	nt Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SKJ	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000	μg/g		
SKF	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000			
SKE	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000	μg/g		
SKD	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000	μg/g		
SKC	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000	μg/g		
SKB	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000	μg/g		
SKP	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000	μg/g		
SKO	2CNAP	2-CHLORONAPHTHALENE	LT	9.60000	μg/l		
SKN	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000	μg/g		
SJZ	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000			
SJX	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000	μg/g		
SJW	2CNAP	2-CHLORONAPHTHALENE	LT	9.60000	μg/l		
SJV	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000	μg/g		
SJU	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000			
SJT	2CNAP	2-CHLORONAPHTHALENE	LT	0.32000			
SJT	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000		R	
SJU	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000	μg/g	R	
SJW	2MNAP	2-METHYLNAPHTHALENE	ND	10.00000		R	
SKB	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000		R	
SKD	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000		R	
SKF	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000		R	
SKK	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000		R	
SKN	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000		R	
SKM	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000		R	
SKP	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000		R	
SKO	2MNAP	2-METHYLNAPHTHALENE	ND	10.00000		R	
SKJ	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000		R	
SKE	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000		R R	
SJZ	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000 0.33000		R	
SJX	2MNAP	2-METHYLNAPHTHALENE	ND	0.33000		R	
SJV	2MNAP	2-METHYLNAPHTHALENE	ND ND	0.33000		R	
SKC	2MNAP	2-METHYLNAPHTHALENE	ND ND	0.33000		R	
SKD	2MP	2-METHYLPHENOL	ND	0.33000		R	
SKC	2MP	2-METHYLPHENOL	ND	0.33000		R	
SKB	2MP	2-METHYLPHENOL 2-METHYLPHENOL	ND	0.33000		R	
SJZ	2MP		ND	0.33000		R	
SJX	2MP	2-METHYLPHENOL 2-METHYLPHENOL	ND	10.00000		R	
SJW	2MP	2-METHYLPHENOL	ND	0.33000		R	
SJV	2MP	2-METHYLPHENOL	ND	0.33000		R	
SJU	2MP	2-METHYLPHENOL	ND	0.33000		R	
SKP	2MP 2MP	2-METHYLPHENOL	ND	10.00000		R	
SKO	2MP	2-METHYLPHENOL	ND	0.33000		R	
SKN SKM	2MP 2MP	2-METHYLPHENOL	ND	0.33000		R	
SKM SKK	2MP	2-METHYLPHENOL	ND	0.33000		R	
SKJ	2MP	2-METHYLPHENOL	ND	0.33000		R	
SKF	2MP	2-METHYLPHENOL	ND	0.33000	μg/g	R	
SKE	2MP	2-METHYLPHENOL	ND	0.33000	μg/g	R	
SJT	2MP	2-METHYLPHENOL	ND	0.33000	μg/g	R	
SJT		2-NITROANILINE	ND	1.70000	μg/g	R	
SJW		2-NITROANILINE	ND	50.00000	μg/l	R	
SJX		2-NITROANILINE	ND	1.70000		R	'
SJV		2-NITROANILINE	ND	1.70000	μg/g	R	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SJU		2-NITROANILINE	ND	1.70000	μg/g	R	
SJZ	2NANIL	2-NITROANILINE	ND	1.70000	μg/g	R	
SKC	2NANIL	2-NITROANILINE	ND	1.70000		R	
SKB	2NANIL	2-NITROANILINE	ND	1.70000		R	
SKP	2NANIL	2-NITROANILINE	ND	1.70000		R	
SKO	2NANIL	2-NITROANILINE	ND	50.00000		R	
SKN	2NANIL	2-NITROANILINE	ND	1.70000		R	
SKM	2NANIL	2-NITROANILINE	ND	1.70000		R	
SKK	2NANIL	2-NITROANILINE	ND	1.70000		R	
SKJ	2NANIL	2-NITROANILINE	ND	1.70000		R	
SKF		2-NITROANILINE	ND	1.70000	μg/g	R	
SKE		2-NITROANILINE	ND	1.70000	μg/g	R	
SKD	2NANIL		ND	1.70000	μg/g	R	
SJT	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SJW	2NP	2-NITROPHENOL	ND	10.00000	μg/I	R	
SJX	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SJV	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SJU	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SJZ	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SKC	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SKB	2NP	2-NITROPHENOL	ND	0.33000	<i>не в</i> μg/g	R	
SKP	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SKO	2NP	2-NITROPHENOL	ND	10.00000	μg/l	R	
SKN	2NP	2-NITROPHENOL	ND	0.33000		R	
SKM	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
					μg/g		
SKK	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SKJ	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SKF	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SKE	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SKD	2NP	2-NITROPHENOL	ND	0.33000	μg/g	R	
SJT		3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SJW		3,3-CICHLOROBENZIDINE	ND	6.00000	μg/l	R	
SJU		3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SJV		3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SJX		3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SKB	33DCBD	3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SJZ	33DCBD	3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SKO		3,3-CICHLOROBENZIDINE	ND	20.00000	μg/l	R	
SKN	33DCBD	3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SKM	33DCBD	3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SKK	33DCBD	3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SKJ	33DCBD	3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SKF	33DCBD	3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SKE	33DCBD	3,3-CICHLOROBENZIDINE	. ND	0.70000	μg/g	R	
SKD	33DCBD	3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SKP	33DCBD	3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SKC	33DCBD	3,3-CICHLOROBENZIDINE	ND	0.70000	μg/g	R	
SJT	3NANIL	3-NITROANILINE	ND	1.70000	μg/g	R	
SJW	3NANIL	3-NITROANILINE	ND	50.00000	μg/l	R	
SJU		3-NITROANILINE	ND	1.70000	μg/g	R	
SJV		3-NITROANILINE	ND	1.70000	μg/g	R	
SJX		3-NITROANILINE	ND	1.70000	μg/g	R	
		3-NITROANILINE	. ND	1.70000		R	

Lot	Те	nt Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SJZ		3-NITROANILINE	ND	1.70000	μg/g	R	
SKO	3NANIL	3-NITROANILINE	ND	50.00000	μg/l	R	
SKN	3NANIL	3-NITROANILINE	ND	1.70000	μg/g	R	
SKM		3-NITROANILINE	ND	1.70000	μg/g	R	
SKK		3-NITROANILINE	ND	1.70000		R	
SKJ		3-NTTROANILINE	ND	1.70000		R	
SKF		3-NITROANILINE	ND	1.70000		R	
SKE		3-NITROANILINE	ND	1.70000		R	
SKD		3-NITROANILINE	ND	1.70000		R	
SKP		3-NITROANILINE	ND	1.70000	μg/g	R	
SKC		3-NITROANILINE	ND	1.70000		R	
SJT SJT		4,6-DINITRO-2-CRESOL	ND	1.70000	μg/g	R	
		·	ND	50.00000	μg/l	R	
SJW		4,6-DINITRO-2-CRESOL				R	
SJU		4,6-DINITRO-2-CRESOL	ND	1.70000			
SJV		4,6-DINITRO-2-CRESOL	ND	1.70000		R	
SJX		4,6-DINITRO-2-CRESOL	ND	1.70000		R	
SKB		4,6-DINITRO-2-CRESOL	ND	1.70000	μg/g	R	
SJZ	46DN2C	4,6-DINITRO-2-CRESOL	ND	1.70000		R	
SKP	46DN2C	4,6-DINITRO-2-CRESOL	ND	1.70000	μg/g	R	
SKO	46DN2C	4,6-DINITRO-2-CRESOL	ND	50. <b>0000</b> 0	μg/l	R	
SKN	46DN2C	4,6-DINITRO-2-CRESOL	ND	1.70000	μg/g	R	
SKM	46DN2C	4,6-DINITRO-2-CRESOL	ND	1.70000	μg/g	R	
KK	46DN2C	4,6-DINITRO-2-CRESOL	ND	1.70000	μg/g	R	
SKJ	46DN2C	4,6-DINITRO-2-CRESOL	ND	1.70000	μg/g	R	
SKF	46DN2C	4,6-DINITRO-2-CRESOL	ND	1.70000	μg/g	R	
SKE	46DN2C	4,6-DINITRO-2-CRESOL	ND	1.70000	μg/g	R	
SKD	46DN2C	4,6-DINITRO-2-CRESOL	ND	1.70000	μg/g	R	
SKC	46DN2C	4,6-DINITRO-2-CRESOL	ND	1.70000	μg/g	R	
TUZ	4BRPPE	4-BROMOPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
sJW	4BRPPE	4-BROMOPHENYLPHENYL ETHER	ND	10.00000	μg/l	R	
SJX		4-BROMOPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SJV		4-BROMOPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SJU		4-BROMOPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SJZ		4-BROMOPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SKC		4-BROMOPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SKB	-	4-BROMOPHENYLPHENYL ETHER	ND	0.33000		R	
		4-BROMOPHENYLPHENYL ETHER	ND ND	0.33000		R	
KP V			ND	10.00000		R	
SKO		4-BROMOPHENYL PHENYL ETHER				R	
KN		4-BROMOPHENYLPHENYL ETHER	ND	0.33000			
KM		4-BROMOPHENYLPHENYL ETHER	ND	0.33000		R	
SKK		4-BROMOPHENYLPHENYL ETHER	ND	0.33000		R	
KJ		4-BROMOPHENYLPHENYL ETHER	ND	0.33000		R	
KF		4-BROMOPHENYLPHENYL ETHER	ND	0.33000		R	
KE		4-BROMOPHENYLPHENYL ETHER	ND	0.33000		R	
KD		4-BROMOPHENYLPHENYL ETHER	ND	0.33000		R	
JT		4-CHLOROANILINE	ND	0.33000		R	
JW	4CANIL	4-CHLOROANILINE	ND	10.00000		R	
IJХ	4CANIL	4-CHLOROANILINE	ND	0.33000		R	
JV	4CANIL	4-CHLOROANILINE	ND	0.33000	μg/g	R	
<b>J</b> U	4CANIL	4-CHLOROANILINE	ND	0.33000	µg/g	R	
JZ	4CANIL	4-CHLOROANILINE	ND	0.33000		R	
SKC	4CANIL	4-CHLOROANILINE	ND	0.33000		R	
SKB		4-CHLOROANILINE	ND	0.33000	µg/g	R	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	T	est Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SI	MIVOLATILES					
SKP		4-CHLOROANILINE	ND	0.33000	µg/g	R	
SKO	4CANIL	4-CHLOROANILINE	ND	10.00000	μg/l	R	
SKN	4CANIL	4-CHLOROANILINE	ND	0.33000	μg/g	R	
SKM	4CANIL		ND	0.33000	μg/g	R	
SKK	4CANIL	4-CHLOROANILINE	ND	0.33000	μg/g	R	
SKJ	4CANIL	4-CHLOROANILINE	ND	0.33000	μg/g	R	
SKF	4CANIL	4-CHLOROANILINE	ND	0.33000	μg/g	R	
SKE	4CANIL	4-CHLOROANILINE	ND	0.33000	μg/g	R	
SKD	4CANIL	4-CHLOROANILINE	ND	0.33000	μg/g	R	
SJT	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SJW	4CL3C	4-CHLORO-3-CRESOL	ND	10.00000	μg/l	R	
SJX	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SJV	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SJU	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SJZ	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SKC	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SKB	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SKP	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SKO	4CL3C	4-CHLORO-3-CRESOL	ND	10.00000	μg/l	R	
SKN	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SKM	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SKK	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SKJ	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SKF	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SKE	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SKD	4CL3C	4-CHLORO-3-CRESOL	ND	0.33000	μg/g	R	
SJT	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SJW	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	10.00000	μg/l	R	
SJX	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SJV	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SJU	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SJZ	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SKC	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SKB	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SKP	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SKO	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	10.00000	μg/l	R	
SKN	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND		μg/g	R	
SKM	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND		μg/g	R	
SKK	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND		μg/g	R	
SKJ	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND		μg/g	R	
SKF	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND		μg/g	R	
SKE	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SKD	4CLPPE	4-CHLOROPHENYLPHENYL ETHER	ND	0.33000	μg/g	R	
SJT	4MP	4-METHYLPHENOL	ND		μg/g	R	
sJW	4MP	4-METHYLPHENOL	ND		μg/l	R	
SJX	4MP	4-METHYLPHENOL	ND		μg/g	R	
SJV	4MP	4-METHYLPHENOL	ND		μg/g	R	
SJU	4MP	4-METHYLPHENOL	ND		μg/g	R	
SJZ	4MP	4-METHYLPHENOL	ND		μg/g	R	
SKC	4MP	4-METHYLPHENOL	ND		rs/s μg/g	R	
SKB	4MP	4-METHYLPHENOL	ND		μg/g	R	
SKP	4MP	4-METHYLPHENOL	ND		μg/g μg/g	R	
			1477	0.55000	r5/5		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SKN	4MP	4-METHYLPHENOL	ND	0.33000	μ <b>g</b> /g	R	
SKM	4MP	4-METHYLPHENOL	ND	0.33000	μg/g	R	
SKK	4MP	4-METHYLPHENOL	ND	0.33000	μg/g	R	
SKJ	4MP	4-METHYLPHENOL	ND	0.33000	μg/g	R	
SKF	4MP	4-METHYLPHENOL	ND	0.33000	μg/g	R	
SKE	4MP	4-METHYLPHENOL	ND	0.33000	μg/g	R	
SKD	4MP	4-METHYLPHENOL		0.04600	μg/g	S	
SJT	4NANIL	4-NITROANILINE	ND	1.70000	μg/g	R	
SJW	4NANIL	4-NITROANILINE	ND	50.00000	μg/l	R	
SJX	4NANIL	4-NITROANILINE	ND	1.70000	μg/g	R	
SJV	4NANIL	4-NITROANILINE	ND	1.70000	μg/g	R	
SJU	4NANIL	4-NITROANILINE	ND	1.70000	μg/g	R	
SJZ	4NANIL	4-NITROANILINE	ND	1.70000	µg/g	R	
SKC	4NANIL		ND	1.70000	μg/g	R	
SKB	4NANIL		ND	1.70000	μg/g	R	
SKP	4NANIL		ND	1.70000	μg/g	R	
SKO	4NANIL		ND	50.00000	μg/l	R	
SKN	4NANIL		ND	1.70000	μg/g	R	
SKM	4NANIL		ND	1.70000	μg/g	R	
			ND ·	1.70000	μg/g	R	
SKK	4NANIL		ND	1.70000	μg/g	R	
SKJ	4NANIL		ND ND	1.70000		R	
SKF	4NANIL		ND ND	1.70000	μg/g μg/g	R	
SKE		4-NITROANILINE	ND	1.70000		R	
SKD		4-NITROANILINE		1.70000	μg/g	R	
SJT	4NP	4-NITROPHENOL	ND ND	50.00000	μg/g	R	
SJW	4NP	4-NTTROPHENOL	ND ND	1.70000	μg/l	R	
SJX	4NP	4-NITROPHENOL	ND	1.70000	μg/g	R	
SJV	4NP	4-NITROPHENOL	ND	1.70000	μg/g	R	
SJU	4NP	4-NITROPHENOL			μg/g	R	
SJZ	4NP	4-NITROPHENOL	ND	1.70000	μg/g		
SKC	4NP	4-NITROPHENOL	ND	1.70000	μg/g	R	
SKB	4NP	4-NITROPHENOL	ND	1.70000	μg/g	R	
SKP	4NP	4-NITROPHENOL	ND	1.70000	μg/g	R	
SKO	4NP	4-NITROPHENOL	ND	50,00000	μg/l	R	
SKN	4NP	4-NITROPHENOL	ND	1.70000	μg/g	R	
SKM	4NP	4-NITROPHENOL	ND	1.70000		R	
SKK	4NP	4-NITROPHENOL	ND	1.70000	μg/g	R	
SKJ	4NP	4-NITROPHENOL	ND	1.70000	μg/g	R	
SKF	4NP	4-NITROPHENOL	ND	1.70000	μg/g	R	
SKE	4NP	4-NITROPHENOL	ND	1.70000	μg/g	R	
SKD	4NP	4-NITROPHENOL	ND	1.70000	μg/g	R	
SKP	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μ <b>g</b> /g		
SKO	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	6.80000	μg/l		
SKK	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
SKJ	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
SKF	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
SKE	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
SKD	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
SKC	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
SKB	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT		μg/g		
SJZ	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
SJX	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT		μg/g		
SJW	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	6.80000			

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	est Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SJV	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
SJU	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
SJT	ABHC	ALPHA-BENZENEHEXACHLORIDE	LT	0.46000	μg/g		
SKD	ACLDA	ALPHA CHLORDANE	ND	1.00000	μg/g	R	
SKC	ACLDA	ALPHA CHLORDANE	ND	1.00000	μg/g	R	
SKB	ACLDA	ALPHA CHLORDANE	ND	1.00000	μg/g	R	
SJZ	ACLDA	ALPHA CHLORDANE	ND	5.00000	μg/g	R	
SJX	ACLDA	ALPHA CHLORDANE	ND	1.00000	μg/g	R	
SJW	ACLDA	ALPHA CHLORDANE	ND	30.00000	μg/l	R	
SJV	ACLDA	ALPHA CHLORDANE	ND	1.00000	μg/g	R	
SJU	ACLDA		ND	1.00000	μg/g	R	
SKP	ACLDA	ALPHA CHLORDANE	ND	1.00000	μg/g	R	
SKO	ACLDA	ALPHA CHLORDANE	ND	30.00000	μg/l	R	
SKK	ACLDA	ALPHA CHLORDANE	ND	1.00000	μg/g	R	
SKJ	ACLDA		ND	1.00000	μg/g	R	
SKF		ALPHA CHLORDANE	ND	1.00000	μg/g	R	
SKE		ALPHA CHLORDANE	ND	1.00000	μg/g	R	
SJT	ACLDA		ND	1.00000	μg/g	R	
SJU		ALPHA-ENDOSULFAN	ND	1.00000	μg/g	R	
SJT		ALPHA-ENDOSULFAN	ND	1.00000	μg/g	R	
SKP		ALPHA-ENDOSULFAN	ND	1.00000	μg/g	R	
SKO		ALPHA-ENDOSULFAN	ND	30.00000	μg/l	R	•
SKK		ALPHA-ENDOSULFAN	ND	1.00000	μg/g	R	
SKJ		ALPHA-ENDOSULFAN	ND	1.00000	μg/g	R	
SKF		ALPHA-ENDOSULFAN	ND	1.00000	μg/g	R	
SKE		ALPHA-ENDOSULFAN	ND	1.00000	μg/g	R	
SKD		ALPHA-ENDOSULFAN	ND	1.00000	μg/g μg/g	R	
SKC		ALPHA-ENDOSULFAN	ND	1.00000	μg/g	R	
SKB		ALPHA-ENDOSULFAN	ND	1.00000	μg/g	R	
SJZ		ALPHA-ENDOSULFAN	ND	0.50000	μg/g	R	
SJX		ALPHA-ENDOSULFAN	ND	1.00000	μg/g	R	
SJW	•	ALPHA-ENDOSULFAN	ND	30.00000	μg/l	R	
SJV		ALPHA-ENDOSULFAN	ND	1.00000	μg/g	R	
SJU	ALDRN	ALDRIN	LT	0.29000	μg/g		
TLS	ALDRN	ALDRIN	LT	0.29000	μg/g		
SKF	ALDRN	ALDRIN	LT	0.29000			
SKE	ALDRN	ALDRIN	LT	0.29000			
SKD	ALDRN	ALDRIN	LT	0.29000			
SKC	ALDRN	ALDRIN	LT	0.29000	μg/g		
SKB	ALDRN	ALDRIN	LT	0.29000	μg/g		
SJZ	ALDRN	ALDRIN	LT	0.29000	μg/g		
SJX	ALDRN	ALDRIN	LT	0.29000	μg/g		
SJW	ALDRN	ALDRIN	LT	12.00000	μg/g		
SKP	ALDRN	ALDRIN	LT	0.29000	μg/l		
SKO	ALDRN	ALDRIN	LT	12.00000	μg/g μg/l		
SKK	ALDRN	ALDRIN	LT	0.29000			
SKJ	ALDRN	ALDRIN	LT	0.29000	μg/g		
SIV	ALDRN	ALDRIN		0.29000	μg/g		
	ALDKN		LT		μg/g		
SJT		ACENEPHTHENE	LT	0.41000	μg/g		
SJW SJZ	ANAPN	ACENEPHTHENE	LT	14.00000	μg/l		
SJZ	ANAPN	ACENERITHENE	LT	0.41000	μg/g		
SKC	ANAPN	ACENEPHTHENE	LT	0.41000	μg/g		
SKE	ANAPN	ACENEPHTHENE	LT	0.41000	μg/g		

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SKD	ANAPN	ACENEPHTHENE	LT	0.41000			
SKP	ANAPN	ACENEPHTHENE	LT	0.41000	μg/g		
SKO	ANAPN	ACENEPHTHENE	LT	14.00000	μg/l		
SKN	ANAPN	ACENEPHTHENE	LT	0.41000	μg/g		
SKM	ANAPN	ACENEPHTHENE	LT	0.41000	μg/g		
SKK	ANAPN	ACENEPHTHENE	LT	0.41000	μg/g		
SKJ	ANAPN	ACENEPHTHENE	LT	0.41000	μg/g		
SKF	ANAPN	ACENEPHTHENE	LT	0.41000	μg/g		
SKB	ANAPN	ACENEPHTHENE	LT	0.41000	μg/g		
SJX	ANAPN	ACENEPHTHENE	LT	0.41000	μg/g		
SJV	ANAPN	ACENEPHTHENE	LT	0.41000			
SJU	ANAPN	ACENEPHTHENE	LT	0.41000			
SJT	ANAPY	ACENAPHTHYLENE	LT	0.46000			
	ANAPY	ACENAPHTHYLENE	LT	19.00000			
SJW SJZ	ANAPY	ACENAPHTHYLENE	LT	0.46000			
SKC	ANAPY	ACENAPHTHYLENE	LT	0.46000			
SKE	ANAPY	ACENAPHTHYLENE	LT	0.46000	μg/g		
SKD	ANAPY	ACENAPHTHYLENE	LT	0.46000	μg/g		
SKP	ANAPY	ACENAPHTHYLENE	LT	0.46000	μg/g		
SKO	ANAPY	ACENAPHTHYLENE	LT	19.00000	μg/l		
SKN	ANAPY	ACENAPHTHYLENE	LT	0.46000	μg/g		
SKM	ANAPY	ACENAPHTHYLENE	LT	0.46000	μg/g		
SKK	ANAPY	ACENAPHTHYLENE	LT	0.46000	μg/g		
SKJ	ANAPY	ACENAPHTHYLENE	LT	0.46000	μg/g		
SKF	ANAPY	ACENAPHTHYLENE	LT	0.46000	μg/g		
	ANAPY	ACENAPHTHYLENE	LT	0.46000			
SKB	ANAPY	ACENAPHTHYLENE	LT	0.46000	μg/g		
SJX	ANAPY	ACENAPHTHYLENE	LT	0.46000	μg/g		
SJV		ACENAPHTHYLENE	LT	0.46000	μg/g		
SJU	ANAPY	ANTHRACENE	LT	0.54000	μg/g		
SJT	ANTRO	ANTHRACENE	LT	20.00000	μg/l		
SJW	ANTRO	ANTHRACENE	LT	0.54000			
SJZ	ANTRO		LT	0.54000	μg/g		
SKC	ANTRO	ANTHRACENE	LT	0.54000	μg/g		
SKE	ANTRO	ANTHRACENE	LT	0.54000	μg/g		
SKD	ANTRO	ANTHRACENE	LT	0.54000			
SKP	ANTRO	ANTHRACENE	LT	20.00000			
SKO	ANTRO	ANTHRACENE	LT	0.54000			
SKN	ANTRO	ANTHRACENE	LT	0.54000			
SKM	ANTRO	ANTHRACENE	LT	0.54000			
SKK	ANTRO	ANTHRACENE	LT	0.54000			
SKJ	ANTRC	ANTHRACENE	LT	0.54000			
SKF	ANTRC	ANTHRACENE	LT	0.54000			
SKB	ANTRO	ANTHRACENE	LT	0.54000			
SJX	ANTRC	ANTHRACENE	LT	0.54000	. • •		
SJV	ANTRC	ANTHRACENE		0.54000			
SJU	ANTRC	ANTHRACENE	LT	0.34000		R	
SJT	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND		. • •		
SJW	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	10.00000		R	
SJX	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000		R	
SJV	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000		R	
<b>SJ</b> U	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000		R	
SJZ	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000		R	
SKC	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000	μg/g	R	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SF	MIVOLATILES			,		
SKB	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000	µg/g	R	
SKP	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000		R	
sko	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	10.00000		R	
SKN	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000	. •	R	
SKM	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000		R	
SKK	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000	re∕s μg/g	R	
SKJ	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000	μg/g	R	
SKF	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000		R	
SKE	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000		R	
SKD	B2CEX	BIS (2-CHLOROETHOXY) METHANE	ND	0.33000	μg/g	R	
SJT	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER	ND	0.33000			
SJW	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER  BIS (2-CHLOROISOPROPYL)ETHER			μg/g	R	
SJX	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER  BIS (2-CHLOROISOPROPYL)ETHER	ND ND	10.00000	μg/l	R	
SJV	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER  BIS (2-CHLOROISOPROPYL)ETHER		0.33000	μg/g	R	
SJU	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER	ND	0.33000	μg/g	R	
SJZ	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER	ND	0.33000	μg/g	R	
SKC	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER	ND	0.33000	μg/g	R	
SKB	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER  BIS (2-CHLOROISOPROPYL)ETHER	ND	0.33000	μg/g	R	
SKP	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER  BIS (2-CHLOROISOPROPYL)ETHER	ND	0.33000	μg/g	R	
SKO	B2CIPE		ND	0.33000	μg/g	R	
SKN	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER BIS (2-CHLOROISOPROPYL)ETHER	ND	10.00000	μg/l	R	
SKM	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER  BIS (2-CHLOROISOPROPYL)ETHER	ND	0.33000		R	
SKK	B2CIPE		ND	0.33000		R	
SKJ	B2CIPE B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER  PIS (3 CHLOROISOPROPYL)ETHER	ND	0.33000	μg/g	R	
SKF	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER BIS (2-CHLOROISOPROPYL)ETHER	ND	0.33000	μg/g	R	
SKE	B2CIPE	•	ND	0.33000	μg/g	R	
SKD	B2CIPE	BIS (2-CHLOROISOPROPYL)ETHER  BIS (2-CHLOROISOPROPYL)ETHER	ND	0.33000	μg/g	R	
SJT		BIS (2-CHLOROISOPROPYL)ETHER  BIS (2-CHLOROETHYL) SETHER	ND	0.33000	μg/g	R	
SJW	B2CLEE	BIS (2-CHLOROETHYL)ETHER	LT	0.33000	μg/g		
SJX	B2CLEE	BIS (2-CHLOROETHYL)ETHER	LT	8.10000	μg/I		
SJV	B2CLEE	BIS (2-CHLOROETHYL)ETHER	LT	0.33000			
SJU	B2CLEE	BIS (2-CHLOROETHYL)ETHER	LT	0.33000			
SJZ	B2CLEE B2CLEE	BIS (2-CHLOROETHYL)ETHER	LT	0.33000	μg/g		
SKC	B2CLEE	BIS (2-CHLOROETHYL)ETHER	LT		μg/g		
SKB ·		BIS (2-CHLOROETHYL)ETHER BIS (2-CHLOROETHYL)ETHER	LT	0.33000	μg/g		
SKP	B2CLEE		LT	0.33000	μg/g		
SKO		BIS (2-CHLOROETHYL)ETHER BIS (2-CHLOROETHYL)ETHER	LT	0.33000			
SKN		BIS (2-CHLOROETHYL)ETHER	LT	8.10000			
SKM		BIS (2-CHLOROETHYL)ETHER	LT	0.33000			
SKK			LT	0.33000			
SKJ		BIS (2-CHLOROETHYL)ETHER BIS (2-CHLOROETHYL)ETHER	LT		μg/g		
	B2CLEE		LT		μg/g		
SKF SKE	B2CLEE B2CLEE	BIS (2-CHLOROETHYL)ETHER	LT	0.33000			
		BIS (2-CHLOROETHYL)ETHER	LT	0.33000			
SKD	B2CLEE	BIS (2-CHLOROETHYL)ETHER  PIG (2-CTLYVIEYY) PHETHALATE	LT	0.33000			
SJT	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000			
SJW	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT		μg/l		
SJX	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT		μg/g		
SJV	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000			
SJU	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000			
SJZ	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000			
SKC	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000			
SKB	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT		μg/g		
SKP	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000	μg/g		

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SKO	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	32.00000	μg/l		
SKN	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000	µg/g		
SKM	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000	μg/g		
SKK	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000	μg/g		
SKJ	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000	μg/g		
SKF	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000	μg/g		
SKE	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000	µg/g		
SKD	B2EHP	BIS (2-ETHYHEXYL) PHTHALATE	LT	0.39000	μg/g		
SJT	BAANT	BENZO [A] ANTHRACENE	LT	0.30000	μg/g		
SJU	BAANT	BENZO [A] ANTHRACENE	LT	0.30000			
SJX	BAANT	BENZO [A] ANTHRACENE	LT	0.30000			
SJZ	BAANT	BENZO [A] ANTHRACENE	LT	0.30000			
			LT	14.00000			
SJW	BAANT	BENZO [A] ANTHRACENE	LT	0.30000			
SJV	BAANT	BENZO [A] ANTHRACENE	LT	0.30000			
SKB	BAANT	BENZO [A] ANTHRACENE	LT	0.30000			
SKD	BAANT	BENZO [A] ANTHRACENE					
SKC	BAANT	BENZO [A] ANTHRACENE	LT	0.30000	μg/g		
SKP	BAANT	BENZO [A] ANTHRACENE	LT	0.30000	μg/g		
SKO	BAANT		LT	14.00000	μg/l		
SKN	BAANT	BENZO [A] ANTHRACENE	LT	0.30000	μg/g		
SKM	BAANT		LT	0.30000	μg/g		
SKK	BAANT	BENZO [A] ANTHRACENE	LT	0.30000	μg/g		
SKJ	BAANT	BENZO [A] ANTHRACENE	LT	0.30000	μg/g		í
SKF	BAANT	BENZO [A] ANTHRACENE	LT	0.30000	μg/g		1
SKE	BAANT	BENZO [A] ANTHRACENE	LT	0.30000	μg/g		
SJT	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SJU	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SJX	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SJZ	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SJW	BAPYR	BENZO [A] PYRENE	LT	10.00000	μg/l		
SJV	BAPYR	BENZO [A] PYRENE	LT	0.38000	µg/g		
SKB	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SKD	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SKC	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g	•	
SKP	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SKO	BAPYR	BENZO [A] PYRENE	LT	10.00000			
SKN	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SKM	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SKK	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SKJ	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SKF	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SKE	BAPYR	BENZO [A] PYRENE	LT	0.38000	μg/g		
SJT	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
SJU	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
SJX		* *	LT	0.36000	μg/g		
SJZ	BBFAN	BENZO [B] FLUORANTHENE	LT	23.00000	μg/l		
SJW	BBFAN	BENZO [B] FLUORANTHENE		0.36000			
SJV	BBFAN	BENZO [B] FLUORANTHENE	LT		μg/g		
SKB	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
SKD	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
SKC	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
SKP	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
SKO	BBFAN	BENZO [B] FLUORANTHENE	LT	23.00000	μ <b>g</b> /l		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Т	est Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemica	l Class: SI	EMIVOLATILES					
SKN	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
SKM	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
SKK	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
SKJ	BBFAN		LT	0.36000	μg/g		
SKF	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
SKE	BBFAN	BENZO [B] FLUORANTHENE	LT	0.36000	μg/g		
SJT	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/g		
SKE	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/g		
SKD	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/g		
SKC	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/g		
SKB	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/g		
SJZ	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/g		
SJX	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/g		
SJW	BBHC	BETA-BENZENEHEXACHLORIDE	LT	4.90000			
SJV	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/l		
SKP	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/g μg/g		
SKO	BBHC	BETA-BENZENEHEXACHLORIDE	LT	4.90000	μg/ <u>l</u> μg/l		
SKK	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000			
SKJ	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/g		
SKF	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/g		
SJU	BBHC	BETA-BENZENEHEXACHLORIDE	LT	0.36000	μg/g		
SJT	BBZP	BUTYLBENZYL PHTHALATE	ND	0.33000	μg/g	ם	
SJU	BBZP	BUTYLBENZYL PHTHALATE	ND	0.33000	μg/g	R	
SJV	BBZP	BUTYLBENZYL PHTHALATE	ND	0.33000	μg/g	R	
SJX	BBZP	BUTYLBENZYL PHTHALATE	ND	0.33000	μg/g	R	
SKB	BBZP	BUTYLBENZYL PHTHALATE	ND	0.33000	μg/g	R	
SKD	BBZP	BUTYLBENZYL PHTHALATE	ND	0.09000	μg/g	R	
SKC	BBZP	BUTYLBENZYL PHTHALATE	ND	0.33000	μg/g	S	
SKP	BBZP	BUTYLBENZYL PHTHALATE	ND	0.33000	μg/g	R	
SKO	BBZP	BUTYLBENZYL PHTHALATE	ND ND	10.00000	μg/g	R	
SKN	BBZP	BUTYLBENZYL PHTHALATE	ND	0.26000	μg/l	R	
SKM	BBZP	BUTYLBENZYL PHTHALATE	ND		μg/g	R	
SKK	BBZP	BUTYLBENZYL PHTHALATE	ND ND	0.33000	μg/g	R	
SKJ	BBZP	BUTYLBENZYL PHTHALATE		0.33000	μg/g	R	
SKF	BBZP	BUTYLBENZYL PHTHALATE	ND	0.33000	μg/g	R	
SKE	BBZP	BUTYLBENZYL PHTHALATE	ND	0.33000	µg/g	R	
SJZ	BBZP	BUTYLBENZYL PHTHALATE	ND	0.33000	µg/g	R	
SJW	BBZP	BUTYLBENZYL PHTHALATE	ND		μg/g	R	
SJU		BETA-ENDOSULFAN	ND	10.00000	μg/l	R	
SJT		BETA-ENDOSULFAN	ND		μg/g	R	
SKF		BETA-ENDOSULFAN	ND		μg/g	R	
SKE		BETA-ENDOSULFAN	ND		μg/g	R	
SKD		BETA-ENDOSULFAN	ND		μg/g	R	
SKC		BETA-ENDOSULFAN	ND		µg/g	R	
SKB		BETA-ENDOSULFAN BETA-ENDOSULFAN	ND		μg/g	R	
SJZ		BETA-ENDOSULFAN	ND		μg/g	R	
SJX		BETA-ENDOSULFAN	ND		μg/g	R	
SJW		BETA-ENDOSULFAN BETA-ENDOSULFAN	ND		μg/g	R	
SKP			ND		μg/l	R	
SKO		BETA-ENDOSULFAN	ND		μg/g	R	
		BETA-ENDOSULFAN	ND		μg/l	R	
SKK		BETA-ENDOSULFAN	ND		μg/g	R	
SKJ		BETA-ENDOSULFAN	. ND		μg/g	R	
SJV	BENSLF	BETA-ENDOSULFAN	ND	0.20000	μg/g	R	

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SJT	BENZO	BENZOIC ACID	ND	1.70000	μg/g	R	
SJW	BENZO	BENZOIC ACID	ND	50.00000	μg/l	R	
SJZ	BENZO	BENZOIC ACID	ND	1.70000		R	
SKC	BENZO	BENZOIC ACID	ND	1.70000		R	
SKE	BENZO	BENZOIC ACID	ND	1.70000		R	
SKD	BENZO	BENZOIC ACID	ND	1.70000		R	
SKP	BENZO	BENZOIC ACID	ND	1.70000		R	
SKO	BENZO	BENZOIC ACID	ND	50.00000		R	
SKN	BENZO	BENZOIC ACID	ND	1.70000	_	R	
SKM	BENZO	BENZOIC ACID	ND	1.70000		R	
			ND	1.70000		R	
SKK	BENZO	BENZOIC ACID	ND	1.70000		R	
SKJ	BENZO	BENZOIC ACID					
SKF	BENZO	BENZOIC ACID	ND	1.70000		R	
SKB	BENZO	BENZOIC ACID	ND	1.70000		R	
SJX	BENZO	BENZOIC ACID	ND	1.70000		R	
V	BENZO	BENZOIC ACID	ND	1.70000		R	
JU	BENZO	BENZOIC ACID	ND	1.70000		R	
11	BGHIPY	BÉNZO [G,H,I] PERYLENE	LT	0.24000	. • •		
JW	<b>BGHIPY</b>	BENZO [G.H,I] PERYLENE	LT	7.10000	. —		
JZ	<b>BGHIPY</b>	BENZO [G,H,I] PERYLENE	LT	0.24000	μg/g		
KC	<b>BGHIPY</b>	BENZO [G.H,I] PERYLENE	LT	0.24000	μg/g		
KE	<b>BGHIPY</b>	BENZO [G,H,I] PERYLENE	LT	0.24000	μg/g		
KD	<b>BGHIPY</b>	BENZO [G,H,I] PERYLENE	LT	0.24000	μg/g		
KP	<b>BGHIPY</b>	BENZO [G.H,I] PERYLENE	LT	0.24000	μg/g		
ко	<b>BGHIPY</b>	BENZO [G,H,I] PERYLENE	LT	7.10000	μg/l		
KN	<b>BGHIPY</b>	BENZO [G,H,I] PERYLENE	LT	0.24000	µg/g		
KM	<b>BGHIPY</b>	BENZO [G.H,I] PERYLENE	LT	0.24000	μg/g		
KK	<b>BGHIPY</b>	BENZO [G,H,I] PERYLENE	LT	0.24000	μg/g		
KJ	<b>BGHIPY</b>	BENZO [G.H.I] PERYLENE	LT	0.24000	µg/g		
KF		BENZO [G,H,I] PERYLENE	LT	0.24000	μg/g		
KB		BENZO [G,H,I] PERYLENE	LT	0.24000	μg/g		
JX		BENZO [G,H,I] PERYLENE	LT	0.24000	μg/g		
JV ·		BENZO [G,H,I] PERYLENE	LT	0.24000	μg/g		
TU		BENZO [G,H,I] PERYLENE	LT	0.24000	μg/g		
TT.	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000			
			LT	21.00000			
JW	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000			
JZ KO	BKFAN	BENZO [K] FLUORANTHENE BENZO [K] FLUORANTHENE	LT	0.80000			
KC	BKFAN		LT	0.80000			
KE	BKFAN	BENZO [K] FLUORANTHENE			μg/g		
KD	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000	μg/g		
KP	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000	μg/g		
KO	BKFAN	BENZO [K] FLUORANTHENE	LT	21.00000	μg/l		
KN	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000			
KM	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000	μg/g		
KK	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000	μg/g		
KJ	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000	μg/g		
(F	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000	μg/g		
KΒ	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000	μg/g		
ΙX	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000	μg/g		
rv	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000	μg/g		
TU	BKFAN	BENZO [K] FLUORANTHENE	LT	0.80000	μ <b>g</b> /g		
Π	BZALC	BENZYL ALCOHOL	ND	0.33000	μg/g	R	
KP	BZALC	BENZYL ALCOHOL	ND	0.33000		R	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	To	est Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SI	MIVOLATILES					
SKO	BZALC	BENZYL ALCOHOL	ND	10.00000	μg/i	R	
SKN	BZALC	BENZYL ALCOHOL	ND	0.33000	μg/g	R	
SKM	BZALC	BENZYL ALCOHOL	ND	0.33000	μg/g	R	
SKK	BZALC	BENZYL ALCOHOL	ND	0.33000		R	
SKJ	BZALC	BENZYL ALCOHOL	ND	0.33000	μg/g	R	
SKF	BZALC	BENZYL ALCOHOL	ND	0.33000	μg/g	R	
SKE	BZALC	BENZYL ALCOHOL	ND	0.33000	μg/g	R	
SKD	BZALC	BENZYL ALCOHOL	ND	0.33000	μg/g	R	
SKC	BZALC	BENZYL ALCOHOL	ND	0.33000	μg/g	R	
SJV	BZALC	BENZYL ALCOHOL	ND	0.33000		R	
SJW	BZALC	BENZYL ALCOHOL	ND	10.00000		R	
SJX	BZALC	BENZYL ALCOHOL	ND	0.33000		R	
SKB	BZALC	BENZYL ALCOHOL	ND	0.33000	μg/g	R	
SJZ	BZALC	BENZYL ALCOHOL	ND	0.33000	μg/g	R	
SJU	BZALC	BENZYL ALCOHOL	ND	0.33000	μg/g	R	
SKD	C5A			0.50000	μg/g	S	
SJT	CHRY"	CHRYSENE	LT	0.45000	μg/g		
SJV	CHRY	CHRYSENE	LT	0.45000	μg/g		
SJW	CHRY	CHRYSENE	LT	15.00000	μg/l		
<b>SJ</b> U	CHRY	CHRYSENE		0.27000	μg/g	P	
SJX	CHRY	CHRYSENE	LT	0.45000	μg/g		
SKB	CHRY	CHRYSENE	LT	0.45000	μg/g		
SKD	CHRY	CHRYSENE	LT	0.45000	μg/g		
SKF	CHRY	CHRYSENE	LT	0.45000	μg/g		
SKE	CHRY	CHRYSENE	LT	0.45000	μg/g		
SKP	CHRY	CHRYSENE	LT	0.45000	μg/g		
SKO	CHRY	CHRYSENE	LT	15.00000	μg/l		
SKN	CHRY	CHRYSENE	LT	0.45000	μg/g		
SKM	CHRY	CHRYSENE	LT	0.45000	μg/g		
SKK	CHRY	CHRYSENE	LT	0.45000	μg/g		
SKJ	CHRY	CHRYSENE	LT	0.45000	μg/g		
SKC	CHRY	CHRYSENE	LT	0.45000	μg/g		
SJZ	CHRY	CHRYSENE	LT	0.45000	μg/g		
SJT	CL6BZ	HEXACHLOROBENZENE	LT	0.26000	μg/g		
SJV	CL6BZ	HEXACHLOROBENZENE	LT	0.26000	μg/g		
SJU	CL6BZ	HEXACHLOROBENZENE	LT				
SJW	CL6BZ	HEXACHLOROBENZENE	LT		μg/l		
SJZ	CL6BZ	HEXACHLOROBENZENE	LT	0.26000	μg/g		
SKC	CL6BZ	HEXACHLOROBENZENE	LT		μg/g		
SKE	CL6BZ	HEXACHLOROBENZENE	LT	0.26000			
SKD	CL6BZ	HEXACHLOROBENZENE	LT		μg/g		
SKP	CL6BZ	HEXACHLOROBENZENE	LT		μg/g		
SKO	CL6BZ	HEXACHLOROBENZENE	LT		μg∕l		
SKN	CL6BZ	HEXACHLOROBENZENE	LT		μg/g		
SKM	CL6BZ	HEXACHLOROBENZENE	LT		μg/g μg/g		
SKK	CL6BZ	HEXACHLOROBENZENE	LT		μg/g		
SKJ	CL6BZ	HEXACHLOROBENZENE	LT		μg/g		
SKF	CL6BZ	HEXACHLOROBENZENE	LT				
SKB	CL6BZ	HEXACHLOROBENZENE	LT	0.26000	μg/g		
SJX	CL6BZ	HEXACHLOROBENZENE	LT				
SJT	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND		μg/g	D	
SJV	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND ND		μg/g	R	
J# 1	CL6CP	HEXACHLOROCYCLOPENTADIENE HEXACHLOROCYCLOPENTADIENE	ND ND	0.33000 0.33000	μg/g	R R	

Lot	Те	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SJW	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	10.00000	μg/l	R	
SJZ	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	0.33000	μg/g	R	
SKC	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	0.33000	μg/g	R	
SKE	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	0.33000		R	
SKD	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	0.33000		R	
SKP	CL6CP.	HEXACHLOROCYCLOPENTADIENE	ND	0.33000		R	
SKO	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	10.00000		R	
SKN	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	0.33000		R	
SKM	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	0.33000		R	
SKK	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	0.33000		R	
SKJ	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	0.33000		R	
SKF	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	0.33000		R	
	CL6CP	HEXACHLOROCYCLOPENTADIENE	ND	0.33000	μg/g	R	
SKB		HEXACHLOROCYCLOPENTADIENE	ND	0.33000	μg/g	R	
SJX	CL6CP		LT	0.40000	μg/g	••	
SJT	CL6ET	HEXACHLOROETHANE	LT	0.40000			
SJV	CL6ET	HEXACHLOROETHANE		0.40000	μ <b>g/g</b> μ <b>g/g</b>		
SJU	CL6ET	HEXACHLOROETHANE	LT LT	5.10000			
SJW	CL6ET	HEXACHLOROETHANE		0.40000	μg/i		
SJZ	CL6ET	HEXACHLOROETHANE	LT		μg/g		
SKC	CL6ET	HEXACHLOROETHANE	LT	0.40000	μg/g		
SKE	CL6ET	HEXACHLOROETHANE	LT	0.40000	μg/g		
SKD	CL6ET	HEXACHLOROETHANE	LT	0.40000			
SKP	CL6ET	HEXACHLOROETHANE	LT	0.40000	µg/g		1
SKO	CL6ET	HEXACHLOROETHANE	LT	5.10000			'
SKN	CL6ET	HEXACHLOROETHANE	LT	0.40000			
SKM	CL6ET	HEXACHLOROETHANE	LT	0.40000			
SKK	CL6ET	HEXACHLOROETHANE	LT	0.40000			
SKJ	CL6ET	HEXACHLOROETHANE	LT	0.40000	μ <b>g</b> /g		
SKF	CL6ET	HEXACHLOROETHANE	LT	0.40000			
SKB	CL6ET	HEXACHLOROETHANE	LT	0.40000			
SJX	CL6ET	HEXACHLOROETHANE	LT	0.40000		_	
SJW	CLDAN	CHLORDANE	ND	30.00000		R	
SJT	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000			
SKB	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000			
SJZ	<b>CPMS</b>	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000			
SKP	<b>CPMS</b>	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000	μg/g		
SKO	<b>CPMS</b>	4-CHLOROPHENYLMETHYL SULFIDE	LT	5.90000	μg/l		
SKN	<b>CPMS</b>	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000	μg/g		
SKM	<b>CPMS</b>	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000	μg/g		
SKK	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000	μg/g		
SKJ	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000	μg/g		
SKF	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000			
SKE	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000			
SKD	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000			
SKC	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000			
SJU	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000			
SJV	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000			
SJW	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	5.90000			
SJX	CPMS	4-CHLOROPHENYLMETHYL SULFIDE	LT	0.37000			
SJT	CPMSO	4-CHLOROPHENYLMETHYL SULFOXIDE	LT	0.27000			
SJZ	CPMSO	4-CHLOROPHENYLMETHYL SULFOXIDE	LT	0.27000			
SKC	CPMSO	4-CHLOROPHENYLMETHYL SULFOXIDE	LT	0.27000			1
	CEMINO	TOTAL STATE AND A STATE OF THE		0.27000			

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	т	est Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual				
Chemical Class: SEMIVOLATILES											
SKP	CPMSO	4-CHLOROPHENYLMETHYL SULFOXIDE	LT	0.27000	110/0						
SKO	CPMSO										
SKN	CPMSO										
SKM	CPMSO										
SKK											
SKF											
					μg/g						
					μ <b>g</b> /g						
				0.69000	μg/g						
				0.69000	μg/g						
				0.69000	μg/g						
				0.69000	μg/g						
		•	LT	0.69000	μg/g						
				0.69000	μg/g						
				38.00000	μg/l						
			LT	0.20000	μg/g						
				0.19000	μg/g	P					
			LT	7.50000	μg/l						
		• •	LT	0.20000	μg/g						
SKC			LT	0.20000	μg/g						
	DBAHA	DIBENZ [AH] ANTHRACENE	LT	0.20000	μg/g						
SKJ	DBAHA	DIBENZ [AH] ANTHRACENE	LT								
SKF	DBAHA	DIBENZ [AH] ANTHRACENE	LT								
SKP	<b>DBAHA</b>	DIBENZ [AH] ANTHRACENE									
SKO	DBAHA	DIBENZ [AH] ANTHRACENE		•							
SKN	DBAHA										
SKM	DBAHA	DIBENZ (AH) ANTHRACENE	LT		μg/g						
SKK	DBAHA	DIBENZ [AH] ANTHRACENE	LT		μg/g						
SKD	DBAHA	DIBENZ [AH] ANTHRACENE	LT		μg/g						
SKB	DBAHA	DIBENZ (AH) ANTHRACENE	LT		ре⁄ Б µg/g						
SJX	DBAHA	DIBENZ [AH] ANTHRACENE	LT		με⁄ε με⁄ε						
SJV	DBAHA	DIBENZ [AH] ANTHRACENE	LT								
CDX	DBHC	DELTA-BENZENEHEXACHLORIDE	LT		μg/g						
CDX	DBHC	DELTA-BENZENEHEXACHLORIDE	LT		μg/g						
SJT	DBHC	DELTA-BENZENEHEXACHLORIDE  DELTA-BENZENEHEXACHLORIDE			μg/g						
SJU	DBHC	DELTA-BENZENEHEXACHLORIDE  DELTA-BENZENEHEXACHLORIDE	LT		μg/g						
SJV	DBHC		LT		μg/g						
SJW		DELTA-BENZENEHEXACHLORIDE	LT		μg/g						
oj w	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	6.40000	μg/I						

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SJX	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.29000	μg/g		
SJZ	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.29000	μg/g		
SKB	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.29000			
SKC	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.29000			
SKD	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.29000			
SKE	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.29000			
SKF	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.29000			
SKJ	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.29000			
SKK	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.29000			
SKM	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.29000			
SKN	DBHC	DELTA-BENZENEHEXACHLORIDE	LT	0.29000			
		DELTA-BENZENEHEXACHLORIDE	LT	6.40000			
SKO	DBHC		LT	0.29000			
SKP	DBHC	DELTA-BENZENEHEXACHLORIDE	ND	0.33000		R	
SJT	DBZFU	DIBENZOFURAN			. • •		
SJU	DBZFU	DIBENZOFURAN	ND	0.33000		R	
SJV	DBZFU	DIBENZOFURAN	ND	0.33000		R	
SJW	DBZFU	DIBENZOFURAN	ND	10.00000		R	
SJX	DBZFU	DIBENZOFURAN	ND	0.33000		R	
SJZ	DBZFU	DIBENZOFURAN	ND	0.33000		R	
SKB	DBZFU	DIBENZOFURAN	ND	0.33000		R	
SKC	DBZFU	DIBENZOFURAN	ND	0.33000		R	
SKD	DBZFU	DIBENZOFURAN	ND	0.33000	μg/g	R	
SKE	DBZFU	DIBENZOFURAN	ND	0.33000	µg/g	R	
SKF	DBZFU	DIBENZOFURAN	ND	0.33000		R	1
SKJ	DBZFU	DIBENZOFURAN	ND	0.33000	µg/g	R	
SKK	DBZFU	DIBENZOFURAN	ND	0.33000	µg/g	R	
SKM	DBZFU	DIBENZOFURAN	ND	0.33000	μg/g	R	
SKN	DBZFU	DIBENZOFURAN	ND	0.33000	µg/g	R	
SKO	DBZFU	DIBENZOFURAN	ND	10.00000	μg/l	R	
SKP	DBZFU	DIBENZOFURAN	ND	0.33000	μg/g	R	
SJT	DEP	DIETHYL PHTHALATE	ND	0.33000	μg/g	R	
SJU	DEP	DIETHYL PHTHALATE	ND	0.33000	μg/g	R	
SJV	DEP	DIETHYL PHTHALATE	ND	0.33000	µg/g	R	
SJW	DEP DEP	DIETHYL PHTHALATE	ND	10.00000		R	
SJX	DEP	DIETHYL PHTHALATE	ND	0.33000		R	
	DEP	DIETHYL PHTHALATE	ND	0.33000		R	
SJZ			ND	0.33000		R	
SKB	DEP DEP	DIETHYL PHTHALATE DIETHYL PHTHALATE	ND	0.33000		R	
SKC			ND ND	0.33000		R	
SKD	DEP	DIETHYL PHTHALATE	ND	0.33000		R	
SKE	DEP	DIETHYL PHTHALATE	ND	0.33000		R	
SKF	DEP	DIETHYL PHTHALATE	ND ND	0.33000		R	
SKJ	DEP	DIETHYL PHTHALATE	ND	0.33000		R	
SKK	DEP	DIETHYL PHTHALATE	ND ND	0.33000		R	
SKM	DEP	DIETHYL PHTHALATE	ND ND	0.33000		R	
SKN	DEP	DIETHYL PHTHALATE	ND ND	10.00000		R	
SKO	DEP	DIETHYL PHTHALATE		0.33000		R	
SKP	DEP	DIETHYL PHTHALATE	ND			ĸ	
SJT	DITH	DITHIANE	LT	0.24000			
SJU	DITH	DITHIANE	LT	0.24000			
SJV	DITH	DITHIANE	LT	0.24000			
SJW	DITH	DITHIANE	LT	7.70000			
SJX	DITH	DITHIANE	LT	0.24000			'
SJZ	DITH	DITHIANE	LT	0.24000	μg/g		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	т	est Name	Mo Bo		Unit Meas	Flag Code	Data Qual
Chemica	l Class: \$1	MIVOLATILES					
SKB	DITH	DITHIANE	LT	0.24000	) μg/g		
SKC	DITH	DITHIANE	LT				
SKD	DITH	DITHIANE	LT				
SKE	DITH	DITHIANE	LT				
SKF	DITH	DITHIANE	LT				
SKJ	DITH	DITHIANE	LT				
SKK	DITH	DITHIANE	LT				
SKM	DITH	DITHIANE	LT				
SKN	DITH	DITHIANE	LT				
SKO	DITH	DITHLANE	LT				
SKP	DITH	DITHIANE	LT				
SJT	DLDRN	DIELDRIN	LT				
SJU	DLDRN	DIELDRIN	LT				
SJV	DLDRN	DIELDRIN	LT				
SJW	DLDRN	DIELDRIN					
SJX	DLDRN	DIELDRIN	LT				
SJZ	DLDRN	DIELDRIN	LT	0.30000			
SKB	DLDRN	DIELDRIN	LT	0.30000			
SKC	DLDRN	DIELDRIN	LT	0.30000			
SKD	DLDRN	DIELDRIN	LT	0.30000			
SKE	DLDRN	DIELDRIN	LT	0.30000	. 00		
SKF	DLDRN	DIELDRIN	LT	0.30000			
SKJ	DLDRN	DIELDRIN	LT	0.30000			
SKK	DLDRN	DIELDRIN	LT	0.30000			
SKO	DLDRN	DIELDRIN	LT	0.30000	μg/g		
SKP	DLDRN	DIELDRIN	LT	11.00000			
SJT	DMP	DIMETHYL PHTHALATE	LT	0.30000		_	
SJU	DMP	DIMETHYL PHTHALATE	ND	0.33000		R	
SJV	DMP	DIMETHYL PHTHALATE	ND	0.33000		R	
SJW	DMP	DIMETHYL PHTHALATE	ND	0.33000		R	
SJX	DMP	DIMETHYL PHTHALATE	ND	10.00000	. •	R	
SJZ	DMP	DIMETHYL PHTHALATE	ND	0.33000		R	
SKB	DMP	DIMETHYL PHTHALATE	ND	0.33000	μg/g	R	
SKC	DMP	DIMETHYL PHTHALATE	ND	0.33000	μg/g	R	
SKD	DMP	DIMETHYL PHTHALATE	ND	0.33000	µg/g	R	
SKE	DMP	DIMETHYL PHTHALATE	ND	0.33000	μg/g	R	
SKF	DMP	DIMETHYL PHTHALATE	ND	0.33000		R	
SKJ	DMP	DIMETHYL PHTHALATE	ND	0.33000		R	
SKK	DMP	DIMETHYL PHTHALATE	ND	0.33000	μg/g	R	
SKM	DMP	DIMETHYL PHTHALATE	ND	0.33000	μg/g	R	
SKN	DMP	DIMETHYL PHTHALATE	ND	0.33000	μg/g	R	
SKO	DMP	DIMETHYL PHTHALATE	ND	0.33000	μg/g	R	
SKP	DMP	DIMETHYL PHTHALATE	ND	10.00000	μg/l	R	
SJT	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000	μg/g	R	
SJU	DNBP		ND	0.33000	μg/g	R	
SJV	DNBP	DI-N-BUTYL PHTHALATE DI-N-BUTYL PHTHALATE	ND	0.33000	μg/g	R	
SJW	DNBP		ND	0.33000	μg/g	R	
SJX	DNBP	DI-N-BUTYL PHTHALATE	ND	10.00000	μg/l	R	
SJZ		DI-N-BUTYL PHTHALATE	ND	0.33000	μg/g	R	
	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000	μg/g	R	
SKB	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000	μg/g	R	
SKC	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000	μg/g	R	
SKD	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000	μg/g	R	
SKE	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000	μg/g	R	

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SKF	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000		R	
SKJ	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000		R	
SKK	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000		R	
SKM	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000		R	
SKN	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000		R	
SKO	DNBP	DI-N-BUTYL PHTHALATE	ND	10.00000		R	
SKP	DNBP	DI-N-BUTYL PHTHALATE	ND	0.33000		R	
SJT	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000			
SJU	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000			
SJV	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000			
SJW	DNOP	DI-N-OCTYL PHTHALATE	LT	15.00000			
SJX	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000			
SJZ	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000			
SKB	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000			
SKC	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000			
SKD	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000			
SKE	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000	μg/g		
SKF	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000	μg/g		
SKJ	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000	μg/g		
SKK	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000	μg/g		
SKM	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000	µg/g		
SKN	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000	μg/g		
SKO	DNOP	DI-N-OCTYL PHTHALATE	LT	15.00000	$\mu g/I$		
SKP	DNOP	DI-N-OCTYL PHTHALATE	LT	0.59000	μg/g		
SJT	<b>ENDRN</b>	ENDRIN	LT	0.41000	μg/g		
SJU	ENDRN	ENDRIN	LT	0.41000	μg/g		
SJV	<b>ENDRN</b>	ENDRIN	LT	0.41000	μg/g		
SJW	<b>ENDRN</b>	ENDRIN	LT	6.60000	μg/l		
SJX	ENDRN	ENDRIN .	LT	0.41000	μg/g		
SJZ	ENDRN	ENDRIN	LT	0.41000	μg/g		
SKB	ENDRN	ENDRIN	LT	0.41000	µg/g		
SKC	<b>ENDRN</b>	ENDRIN	LT	0.41000	μg/g		
SKD	<b>ENDRN</b>	ENDRIN	LT	0.41000	μg/g		
SKE	ENDRN	ENDRIN	LT	0.41000	μg/g		
SKF	ENDRN	ENDRIN	LT				
SKJ	<b>ENDRN</b>	ENDRIN	LT	0.41000	μg/g		
SKK	ENDRN	ENDRIN	LT	0.41000	μg/g		
SKO	ENDRN	ENDRIN	LT	6.60000	μg/l		
SKP	ENDRN	ENDRIN	LT	0.41000	μg/g		
CDX	ENDRN	ENDRIN KETONE	LT	0.01600	$\mu g/g$		
CDX	ENDRN	ENDRIN KETONE	LT	0.01600	μg/g		
SJT	ENDRN	ENDRIN KETONE	ND	0.20000	μg/g	R	
SJU	ENDRN	ENDRIN KETONE	ND	0.20000	μg/g	R	
SJV	ENDRN	ENDRIN KETONE	ND	0.20000	μg/g	R	
SJW	ENDRN	ENDRIN KETONE	ND	6.00000	μg/l	R	
SJX	ENDRN	ENDRIN KETONE	ND	0.20000	μg/g	R	
SJZ	ENDRN	ENDRIN KETONE	ND	1.00000	μg/g	R	
SKB	ENDRN	ENDRIN KETONE	ND	0.20000	μg/g	R	
SKC	ENDRN	ENDRIN KETONE	ND	0.20000	μg/g	R	
SKD	ENDRN	ENDRIN KETONE	ND	0.20000	μ <b>g</b> /g	R	
SKE	ENDRN	ENDRIN KETONE	ND	0.20000	μg/g	R	
SKF	ENDRN	ENDRIN KETONE	ND	0.20000	μ <b>g</b> /g	R	
SKJ	ENDRN	ENDRIN KETONE	ND	0.20000		R	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SKK	ENDRN	ENDRIN KETONE	ND	0.20000	μg/g	R	
SKM	ENDRN	ENDRIN KETONE	ND	0.20000	μg/g	R	
SKN	ENDRN	ENDRIN KETONE	ND	0.20000	μg/g	R	
SKO	ENDRN	ENDRIN KETONE	ND	6.00000		R	
SKP	ENDRN	ENDRIN KETONE	ND	0.20000		R	
SJT	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SJU	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SJV	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SJW	ESFSO4	ENDOSULFAN SULFATE	ND	6.00000	μg/l	R	
SJX	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SJZ	ESFSO4	ENDOSULFAN SULFATE	ND	1.00000	μ <b>g</b> /g	R	
SKB	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SKC	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SKD	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	Ŕ	
SKE	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SKF	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SKJ	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SKK	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SKO	ESFSO4	ENDOSULFAN SULFATE	ND	6.00000	μg/l	R	
SKP	ESFSO4	ENDOSULFAN SULFATE	ND	0.20000	μg/g	R	
SJT	FANT	FLUORANTHENE	LT	0.52000	µg/g		
SJU	FANT	FLUORANTHENE	LT	0.52000	μg/g		
SJV	FANT	FLUORANTHENE	LT	0.52000	μg/g		
SJW	FANT	FLUORANTHENE	LT	20.00000	μg/l		
SJX	FANT	FLUORANTHENE	LT	0.52000	μg/g		
SJZ	FANT	FLUORANTHENE	LT	0.52000	μg/g		
SKB	FANT	FLUORANTHENE	LT	0.52000	μg/g		
SKC	FANT	FLUORANTHENE	LT	0.52000	μg/g		
SKD SKE	FANT FANT	FLUORANTHENE FLUORANTHENE	LT LT	0.52000 0.52000	μg/g		
SKF	FANT	FLUORANTHENE	LT	0.52000	μg/g		
SKJ	FANT	FLUORANTHENE	LT	0.52000	μ <b>g</b> /g μ <b>g</b> /g		
SKK	FANT	FLUORANTHENE	LT	0.52000	μg/g		
SKM	FANT	FLUORANTHENE	LT	0.52000	μg/g		
SKN	FANT	FLUORANTHENE	LT	0.52000	μg/g		
SKO	FANT	FLUORANTHENE	LT	20.00000	μg/l		
SKP	FANT	FLUORANTHENE	LT	0.52000	μg/g		
SJT		FLUORENE	ND	0.33000	μg/g	R	
SJU		FLUORENE	ND	0.33000	μg/g	R	
SJV		FLUORENE	ND	0.33000	μg/g	R	
SJW		FLUORENE	ND	10.00000	μg/l	R	
SJX		FLUORENE	ND	0.33000	μg/g	R	
SJZ		FLUORENE	ND	0.33000	μg/g	R	
SKB		FLUORENE	ND .	0.33000	μg/g	R	
SKC	FLRENE	FLUORENE	ND	0.33000	μg/g	R	
SKD		FLUORENE	ND	0.33000	μg/g	R	
SKE	FLRENE	FLUORENE	ND	0.33000	μg/g	R	
SKF	FLRENE	FLUORENE	ND	0.33000	μg/g	R	
SKJ	FLRENE	FLUORENE	ND	0.33000	μg/g	R	
SKK	FLRENE	FLUORENE	ND	0.33000	μg/g	R	
SKM	FLRENE	FLUORENE	ND	0.33000	µg/g	R	
SKN		FLUORENE	ND	0.33000	μg/g	R	
SKO	FLRENE	FLUORENE	ND	10.00000	μg/l	R	

Method Blanks - Chemical Quality Control - Phase I RI data

T -4	<b></b>	A Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Lot		st Name	DOOL	v alure	MICES	CORE	- Valen
		MIVOLATILES	<b>ND</b>	0.22000		n	
SKP		FLUORENE	ND	0.33000		R	
SJZ	GCLDA	GAMMA-CHLORDANE	ND	5.00000 5.00000	μg/g	R R	
SKB	GCLDA	GAMMA-CHLORDANE	ND ND	5.00000	μg/g	R	
SKC	GCLDA	GAMMA-CHLORDANE	ND ND	5.00000		R	
SKD	GCLDA	GAMMA-CHLORDANE	ND ND	5.00000		R	
SKE	GCLDA	GAMMA-CHLORDANE	ND	5.00000		R	
SKF	GCLDA	GAMMA-CHLORDANE	ND ND	5.00000	μg/g μg/g	R	
SKJ	GCLDA	GAMMA-CHLORDANE	ND	5.00000		R	
SKK	GCLDA	GAMMA-CHLORDANE		30.00000	μg/g	R	
SKO	GCLDA	GAMMA-CHLORDANE	ND		. •	R	
SKP	GCLDA	GAMMA-CHLORDANE	ND	5.00000	μg/g	K	
SJT	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SJU	HCBD	HEXACHLOROBUTADIENE	LT	0.42000			
SJV	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SJW	HCBD	HEXACHLOROBUTADIENE	LT	18.00000	μg/l		
SJX	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SJZ	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SKB	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SKC	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SKD	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SKE	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SKF	HCBD <sub>.</sub>	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SKJ	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SKK	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SKM	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SKN	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SKO	HCBD	HEXACHLOROBUTADIENE	LT	18.00000	μg/l		
SKP	HCBD	HEXACHLOROBUTADIENE	LT	0.42000	μg/g		
SJT	HPCL	HEPTACHLOR	LT	0.28000	μg/g		
SJU	HPCL	HEPTACHLOR	LT	0.28000	μg/g		
SJV	HPCL	HEPTACHLOR	LT	0.28000	μg/g		
SJW	HPCL	HEPTACHLOR	LT	6.20000	μg/l		
SJX	HPCL	HEPTACHLOR	LT	0.28000	μg/g		
SJZ	HPCL	HEPTACHLOR	LT	0.28000	μg/g		
SKB	HPCL	HEPTACHLOR	LT	0.28000	μg/g		
SKC	HPCL	HEPTACHLOR	LT	0.28000			
SKD	HPCL	HEPTACHLOR	LT	0.28000	μg/g		
SKE	HPCL	HEPTACHLOR	LT	0.28000	µg/g		
SKF	HPCL	HEPTACHLOR	LT	0.28000	µg/g		
SKJ	HPCL	HEPTACHLOR	LT	0.28000	μg/g		
SKK	HPCL	HEPTACHLOR	LT	0.28000	μg/g		
SKO	HPCL	HEPTACHLOR	LT	6.20000	μg/l		
SKP	HPCL	HEPTACHLOR	LT	0.28000	μ <b>g</b> /g		
SJT	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	µg/g		
SJU	<b>HPCLE</b>	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
SJV	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
SJW	<b>HPCLE</b>	HEPTACHLOREPOXIDE	LT	7.20000	μg/l		
SJX	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
SJZ	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
SKB	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
SKC	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
SKD	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
SKE	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SKF	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
SKJ	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
SKK	HPCLE	HEPTACHLOREPOXIDE	LT	0.36000	μg/g		
SKO		HEPTACHLOREPOXIDE	LT	7.20000	μg/l		
SKP		HEPTACHLOREPOXIDE	LT	0.36000			
SJT		INDENO [1,2,3-C,D] PYRENE	LT	0.21000			
SJU		INDENO [1,2,3-C,D] PYRENE	LT	0.21000			
SJV		INDENO [1,2,3-C,D] PYRENE	LT	0.21000	μg/g		
SJW		INDENO [1,2,3-C,D] PYRENE	LT	7.20000			
SJX	ICDPYR	INDENO [1,2,3-C,D] PYRENE	LT	0.21000			
SJZ		INDENO [1,2,3-C,D] PYRENE	LT	0.21000			
SKB		INDENO [1,2,3-C,D] PYRENE	LT	0.21000			
SKC	ICDPYR	INDENO [1,2,3-C,D] PYRENE	LT	0.21000			
SKD	ICDPYR	INDENO [1,2,3-C,D] PYRENE	LT	0.21000			
SKE		INDENO [1,2,3-C,D] PYRENE	LT	0.21000			
SKF	ICDPYR	INDENO [1,2,3-C,D] PYRENE	LT	0.21000			
SKJ	ICDPYR	INDENO [1,2,3-C,D] PYRENE	LT	0.21000			
SKK	ICDPYR	INDENO [1,2,3-C,D] PYRENE	LT	0.21000	μg/g		
SKM	<b>ICDPYR</b>	INDENO [1,2,3-C,D] PYRENE	LT	0.21000	μg/g		
SKN	ICDPYR	INDENO [1,2,3-C,D] PYRENE	LT	0.21000	μg/g		
SKO	ICDPYR	INDENO [1,2,3-C,D] PYRENE	LT	7.20000	μg/l		
SKP	ICDPYR	INDENO [1,2,3-C,D] PYRENE	LT	0.21000	μg/g		
SJT	ISOPHR	ISOPHORONE	ND	0.33000	μg/g	R	
SJU	ISOPHR	ISOPHORONE	ND	0.33000	μg/g	R	
SJV	ISOPHR	ISOPHORONE	ND	0.33000		R	
SJW	ISOPHR	ISOPHORONE	ND	10.00000	μg/l	R	
SJX		ISOPHORONE	ND	0.33000	μg/g	R	
SJZ		ISOPHORONE	ND	0.33000	μg/g	R	
SKB		ISOPHORONE	ND	0.33000	µg/g	R	
SKC		ISOPHORONE	ND	0.33000	μg/g	R	
SKD		ISOPHORONE	ND	0.33000	μg/g	R	
SKE		ISOPHORONE	ND	0.33000	μg/g	R	
SKF		ISOPHORONE	ND	0.33000	μg/g	R	
SKJ		ISOPHORONE	ND	0.33000	μg/g	R	
SKK		ISOPHORONE	ND	0.33000	μg/g	R	
SKM		ISOPHORONE	ND	0.33000		R	
SKN	ISOPHR	ISOPHORONE	ND	0.33000	μg/g	R	
SKO	ISOPHR	ISOPHORONE	ND	10.00000	μg/l	R	
SKP	ISOPHR	ISOPHORONE	ND	0.33000	μg/g	R	
SJT	LIN	LINDANE	LT		μg/g		
SJU	LIN	LINDANE LINDANE	LT LT	0.43000	μg/g		
SJV SJW	LIN LIN	LINDANE	LT	5.80000	μg/g		
SJX	LIN	LINDANE	LT	0.43000	μg/l		
SJZ	LIN	LINDANE	LT	0.43000	μg/g μg/g		
SKB	LIN	LINDANE	LT	0.43000	μg/g μg/g		
SKC	LIN	LINDANE	LT	0.43000	μg/g		
SKD	LIN	LINDANE	LT	0.43000	μg/g		
SKE	LIN	LINDANE	LT	0.43000	μg/g		
SKF	LIN	LINDANE	LT	0.43000	μg/g		
SKJ	LIN	LINDANE	LT	0.43000	μg/g μg/g		
SKK	LIN	LINDANE	LT	0.43000	μg/g μg/g		
SKO	LIN	LINDANE	LT	5.80000			

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	l Class: SE	MIVOLATILES					
SKP	LIN	LINDANE	LT	0.43000	μg/g		
SJT	MEXCL	METHOXYCHLOR	ND	1.00000	μg/g	R	
SJU	MEXCL	METHOXYCHLOR	ND	1.00000	μg/g	R	
SJV	MEXCL	METHOXYCHLOR	ND	1.00000		R	
SJW	MEXCL	METHOXYCHLOR	ND	30.00000		R	
SJX	MEXCL	METHOXYCHLOR	ND	1.00000		R	
SJZ	MEXCL	METHOXYCHLOR	ND	5.00000		R	
SKB	MEXCL	METHOXYCHLOR	ND	1.00000		R	
SKC	MEXCL	METHOXYCHLOR	ND	1.00000		R	
SKD	MEXCL	METHOXYCHLOR	ND	1.00000		R	
	MEXCL	METHOXYCHLOR	ND	1.00000		R	
SKE			ND	1.00000		R	
SKF	MEXCL	METHOXYCHLOR	ND	1.00000		R	
SKJ	MEXCL	METHOXYCHLOR				R	
SKK	MEXCL	METHOXYCHLOR	ND	1.00000			
SKO	MEXCL	METHOXYCHLOR	ND	30.00000		R	
SKP	MEXCL	METHOXYCHLOR	ND	1.00000		R	
SJT	MLTHN	MALATHION	LT	0.48000	μg/g		
SJU	MLTHN	MALATHION	LT	0.48000	μg/g		
SJV	MLTHN	MALATHION	LT	0.48000	μg/g		
SJW	MLTHN	MALATHION	LT	7.30000		•	
SJX	MLTHN	MALATHION	LT	0.48000	μg/g		
SJZ	MLTHN	MALATHION	LT	0.48000			
SKB	MLTHN	MALATHION	LT	0.48000			
SKC	MLTHN	MALATHION	LT	0.48000			
SKD	MLTHN	MALATHION	LT	0.48000	μg/g		
SKE	MLTHN	MALATHION	LT	0.48000	μg/g		
SKF	MLTHN	MALATHION	LT	0.48000	μg/g		
SKJ	MLTHN	MALATHION	LT	0.48000	μg/g		
SKK	MLTHN	MALATHION	LT	0.48000	μg/g		
SKM	MLTHN	MALATHION	LT	0.48000	μg/g		
SKN	MLTHN	MALATHION	LT	0.48000	μg/g		
SKO	MLTHN	MALATHION	LT	7.30000	μg/l		
SKP	MLTHN	MALATHION	LT	0.48000	μg/g		
SJT	NAP	NAPHTHALENE	LT	0.42000	μg/g		
SJU	NAP	NAPHTHALENE	LT	0.42000	μg/g		
SJV	NAP	NAPHTHALENE	LT	0.42000			
SJW	NAP	NAPHTHALENE	LT	17.00000			
SJX	NAP	NAPHTHALENE	LT	0.42000			
SJZ	NAP	NAPHTHALENE	LT	0.42000			
	NAP NAP	NAPHTHALENE	LT	0.42000			
SKB			LT	0.42000	μg/g		
SKC	NAP	NAPHTHALENE NAPHTHALENE	LT	0.42000			
SKD	NAP		LT	0.42000			
SKE	NAP	NAPHTHALENE	LT	0.42000			
SKF	NAP	NAPHTHALENE	LT LT		μg/g		
SKJ	NAP	NAPHTHALENE			μg/g		
SKK	NAP	NAPHTHALENE	LT	0.42000			
SKM	NAP	NAPHTHALENE	LT	0.42000	μg/g		
SKN	NAP	NAPHTHALENE	LT	0.42000	μg/g		
SKO	NAP	NAPHTHALENE	LT	17.00000			
SKP	NAP	NAPHTHALENE	LT	0.42000		_	
SJT	NB	NITROBENZENE	ND		μg/g	R	4
SJU	NB	NITROBENZENE	ND	0.33000		R	
SJV	NB	NITROBENZENE	ND	0.33000	μg/g	R	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Т	est Name	Meas Bool	Value	Unit Meas	Fing Code	Data Qua
Chemical	Class: SI	EMIVOLATILES					
SJW	NB	NITROBENZENE	ND	10.00000	μg/l	R	
SJX	NB	NITROBENZENE	ND	0.33000		R	
SJZ	NB	NITROBENZENE	ND	0.33000		R	
SKB	NB	NTTROBENZENE	ND	0.33000		R	
SKC	NB	NITROBENZENE	ND	0.33000		R	
SKD	NB	NTTROBENZENE	ND	0.33000		R	
SKE	NB	NITROBENZENE	ND	0.33000		R	
SKF	NB	NITROBENZENE	ND	0.33000		R	
SKJ	NB	NITROBENZENE	ND	0.33000		R	
SKK	NB	NITROBENZENE	ND	0.33000		R	
SKO	NB	NITROBENZENE	ND	10.00000		R	
SKP	NB	NITROBENZENE	ND	0.33000		R	
SJT	NDNPA		LT	0.36000		K	
SJU	NDNPA		LT	0.36000			
SJV	NDNPA				μg/g		
SJW	NDNPA		LT	0.36000			
SJX	NDNPA		LT	4.50000	μ <b>g/</b> ]		
SJZ			LT	0.36000	μg/g		
SKB	NDNPA		LT	0.36000	μg/g		
	NDNPA	NITROSO DI-N-PROPYLAMINE	LT	0.36000	μg/g		
SKC	NDNPA		LT	0.36000	μg/g		
SKD	NDNPA		LT	0.36000	µg/g		
SKE	NDNPA	NITROSO DI-N-PROPYLAMINE	LT	0.36000	μg/g		
SKF	NDNPA	NITROSO DI-N-PROPYLAMINE	LT	0.36000	μg/g		
SKJ	NDNPA	NITROSO DI-N-PROPYLAMINE	LT	0.36000	μg/g		
SKK	NDNPA	NITROSO DI-N-PROPYLAMINE	LT	0.36000	μg/g		
SKM	NDNPA	NITROSO DI-N-PROPYLAMINE	LT	0.36000	μg/g		
SKN	NDNPA	NITROSO DI-N-PROPYLAMINE	LT	0.36000	μg/g		
SKO	NDNPA	NITROSO DI-N-PROPYLAMINE	LT	4.50000	μg/l		
SKP	NDNPA	NITROSO DI-N-PROPYLAMINE	LT	0.36000	μg/g		
SJT	NNDPA	N-NITROSO DIPHENYLAMINE	ND	0.33000	μg/g	R	
SJU	NNDPA	N-NITROSO DIPHENYLAMINE	ND	0.33000	μg/g	R	
SJV	NNDPA	N-NITROSO DIPHENYLAMINE	ND	0.33000	μg/g	R	
SJW	NNDPA	N-NITROSO DIPHENYLAMINE	ND	10.00000	μg/l	R	
SJX	NNDPA	N-NITROSO DIPHENYLAMINE	ND	0.33000	μg/g	R	
SJZ	NNDPA	N-NITROSO DIPHENYLAMINE	ND	0.33000	μg/g	R	
SKB	NNDPA	N-NITROSO DIPHENYLAMINE	ND	0.33000		R	
SKC	NNDPA	N-NITROSO DIPHENYLAMINE	ND	0.33000		R	
SKD	NNDPA	N-NITROSO DIPHENYLAMINE	ND	0.33000		R	
SKE	NNDPA	N-NITROSO DIPHENYLAMINE	ND	0.33000		R	
SKF	NNDPA	N-NITROSO DIPHENYLAMINE	ND	0.33000		R	
SKJ	NNDPA		ND	0.33000		R	
SKK	NNDPA		ND	0.33000		R	
SKM	NNDPA		ND ND	0.33000			
SKN	NNDPA	N-NITROSO DIPHENYLAMINE	ND	0.33000		R	
SKO	NNDPA	N-NITROSO DIPHENYLAMINE				R	
SKP	NNDPA	N-NITROSO DIPHEN I LAMINE N-NITROSO DIPHEN Y LAMINE	ND	10.00000		R	
SJT	OXAT	1,4-OXATHIANE	ND	0.33000		R	
SJU	OXAT		LT	0.25000			
		1,4-OXATHIANE	LT	0.25000			
SJV	OXAT	1,4-OXATHIANE	LT	0.25000			
SJW	OXAT	1,4-OXATHIANE	LT	9.10000			
SJX	OXAT	1,4-OXATHIANE	LT	0.25000			
SJZ	OXAT	1,4-OXATHIANE	·LT	0.25000			
SKB	OXAT	1,4-OXATHIANE	LT	0.25000	110/0		

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SKC	OXAT	1,4-OXATHIANE	LT	0.25000	μg/g		
SKD	OXAT	1,4-OXATHIANE	LT	0.25000	μg/g		
SKE	OXAT	1,4-OXATHIANE	LT	0.25000	µg/g		
SKF	OXAT	1,4-OXATHIANE	LT	0.25000	µg/g		
SKJ	OXAT	1,4-OXATHIANE	LT	0.25000	μg/g		
SKK	OXAT	1,4-OXATHIANE	LT	0.25000	μg/g		
SKM	OXAT	1,4-OXATHIANE	LT	0.25000			
SKN	OXAT	1,4-OXATHIANE	LT	0.25000			
SKO	OXAT	1,4-OXATHIANE	LT	9.10000			
SKP	OXAT	1,4-OXATHIANE	LT	0.25000			
		•	LT	0.07000		L	
CDX	PCB016	PCB 1016	LT	0.07000	μg/g	_	
CED	PCB016	PCB 1016	LT	0.05400		L	
CDX	PCB260	PCB 1260				L	
CED	PCB260	PCB 1260	LT	0.05400	μg/g	D	
SJT	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SJU	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SJV	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SJW	PCP	PENTACHLOROPHENOL	ND	50.00000	μg/l	R	
SJX	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SJZ	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SKB	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SKC	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SKD	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SKE	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SKF	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SKJ	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SKK	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SKM	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SKN	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SKO	PCP	PENTACHLOROPHENOL	ND	50.00000	μ <b>g/l</b>	R	
SKP	PCP	PENTACHLOROPHENOL	ND	1.70000	μg/g	R	
SJT	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
SJU	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
SJV	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
SJW	PHANT	PHENANTHRENE	LT	22.00000	μg/l		
SJX	PHANT	PHENANTHRENE	LT	0.41000			
SJZ	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
SKB	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
SKC	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
SKD	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
SKE	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
SKF	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
SKJ	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
SKK	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
	PHANT	PHENANTHRENE	LT	0.41000	μg/g		
SKM			LT	0.41000	μg/g		
SKN	PHANT	PHENANTHRENE	LT	22.00000	μg/l		
SKO	PHANT	PHENANTHRENE	LT	0.41000			
SKP	PHANT	PHENANTHRENE			μg/g	D	
SJT	PHENO	PHENOL	ND	0.33000	μg/g	R	
SJU	PHENO	PHENOL	ND	0.33000	μg/g	R	
SJV	PHENO	PHENOL	ND	0.33000	μg/g	R	
SJW	PHENO	PHENOL	ND	10.00000	μg/l	R	
SJX	PHENO	PHENOL	ND	0.33000	µg/g	R	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	To	est Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qua
Chemical	Class: SE	MIVOLATILES					
SJZ	PHENO		ND	0.33000	μg/g	R	
SKB	PHENO	PHENOL	ND	0.33000	μg/g	R	
SKC	PHENO	PHENOL	ND	0.33000	μg/g	R	
SKD	PHENO	PHENOL	ND	0.33000		R	
SKE	PHENO	PHENOL	ND	0.33000		R	
SKF	PHENO	PHENOL	ND	0.33000		R	
SKJ	PHENO	PHENOL	ND	0.33000		R	
SKK	PHENO	PHENOL	ND	0.33000	μg/g	R	
SKM	PHENO	PHENOL	ND	0.33000	μg/g	R	
SKN	PHENO	PHENOL	ND	0.33000	μg/g	R	
SKO	PHENO	PHENOL	ND	10.00000	μ <b>g/</b> l	R	
SKP	PHENO	PHENOL	ND	0.33000	μg/g	R	
SJT	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SJU	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SJV	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SJW	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	9.70000	μg/l		
SJX	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SJZ	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SKB	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SKC	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SKD	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SKE	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SKF	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SKJ	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SKK SKO	PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	0.18000	μg/g		
SKO SKP	PPDDD PPDDD	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE	LT	9.70000	μg/l		
SJT	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHANE 2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT LT	0.18000	μg/g		
SJU SJU	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT LT	0.22000 0.22000	μg/g		
SJV	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g		
SJW	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	9.30000	μg/g μg/l		
SJX	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g μg/g		
SJZ	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g		
SKB	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g		
SKC	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g		
SKD	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g		
SKE	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g		
SKF	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g		
SKJ	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g		
SKK	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT	0.22000	μg/g		
SKO	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT		μg/l		
SKP	PPDDE	2,2-BIS(PARA-CHLOROPHENYL)-1,1-DICHLOROETHENE	LT		μg/g		
TL2	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	0.41000	μg/g		
SJU	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT		μg/g		
SJV	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT		μg/g		
SJW	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT		μg/l		
SJX	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT		μg/g		
SJZ	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT		μg/g		
SKB	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	0.41000			
SKC	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	0.41000			
SKD	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	0.41000			
SKE	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	0.41000			
SKF	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	0.41000			

Lot	Tes	at Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: SE	MIVOLATILES					
SKJ	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	0.41000	μg/g		
SKK	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	0.41000	µg/g		
SKO	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	7.30000	μg/l		
SKP	PPDDT	2,2-BIS(PARA-CHLOROPHENYL)-1,1,1-TRICHLOROETHANE	LT	0.41000	μg/g		
SJT	PRTHN	PARATHION	LT	0.46000	µg/g		
SJU	PRTHN	PARATHION	LT	0.46000	μg/g		
SJV	PRTHN	PARATHION	LT	0.46000	µg/g		
SJW	PRTHN	PARATHION	LT	4.70000	μg/l		
SJX	PRTHN	PARATHION	LT	0.46000	μg/g		
SJZ	PRTHN	PARATHION	LT	0.46000	μg/g		
SKB	PRTHN	PARATHION	LT	0.46000			
SKC	PRTHN	PARATHION	LT	0.46000			
		PARATHION	LT	0.46000			
SKD	PRTHN	PARATHION	LT	0.46000			
SKE	PRTHN		LT	0.46000			
SKF	PRTHN	PARATHION .	LT	0.46000			
SKJ	PRTHN	PARATHION PARATHION	LT	0.46000			
SKK	PRTHN	PARATHION	LT	0.46000			
SKM	PRTHN	PARATHION	LT	0.46000			
SKN	PRTHN	PARATHION	LT	4.70000			
SKO	PRTHN	PARATHION	LT	0.46000			
SKP	PRTHN	PARATHION	LT	0.42000			
SJT	PYR	PYRENE	LT	0.42000			
SJU	PYR	PYRENE	LT	0.42000			
SJV	PYR	PYRENE	LT	17.00000			
SJW	PYR.	PYRENE	LT	0.42000			
SJX	PYR	PYRENE	LT	0.42000			
SJZ	PYR	PYRENE		0.42000			
SKB	PYR	PYRENE	LT	0.42000			
SKC	PYR	PYRENE	LT	0.42000			
SKD	PYR	PYRENE	LT	0.42000			
SKE	PYR	PYRENE	LT				
SKF	PYR	PYRENE	LT	0.42000			
SKJ	PYR	PYRENE	LT	0.42000 0.42000			
SKK	PYR	PYRENE	LT	0.42000			
SKM	PYR	PYRENE	LT				
SKN	PYR	PYRENE	LT	0.42000			
SKO	PYR	PYRENE	LT	17.00000 0.42000			
SKP	PYR	PYRENE	LT				
CDX	TXPHE	TOXAPHENE	LT	0.16000			
CDX	TXPHE	TOXAPHENE	LT	0.16000		6	
SKE		UNKNOWN		0.40000		S	
SKF		UNKNOWN		0.30000		S	
SKN	UNK531	UNKNOWN		2.00000		S	
SKD		UNKNOWN		5.00000		S	
SKE	UNK533	UNKNOWN		4.00000		S	
SKF		UNKNOWN		3.00000		S	
SKN	UNK533	UNKNOWN		0.20000		S	
SJT	UNK536	UNKNOWN		0.30000		S	
SJZ	UNK539	UNKNOWN		0.20000		S	
SKJ	UNK539	UNKNOWN		0.20000		S	
SKK	UNK539	UNKNOWN		0.20000		S	
SJT		UNKNOWN		0.50000		S	•
SJX	TINK \$40	UNKNOWN		0.20000	µg/g		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Test Name	Meas Unit Bool Value Meas	Flag Code	Data Qual
Chemical	Class: SEMIVOLATILES			
SJU	UNK541 UNKNOWN	0.20000 µg/g	s	
SJV	UNK541 UNKNOWN	0.20000 µg/g		
SKK	UNK541 UNKNOWN	0.10000 µg/g	S	
SJT	UNK544 UNKNOWN	0.20000 µg/g	S	
SJX	UNK544 UNKNOWN	0.30000 µg/g		
SJZ	UNK544 UNKNOWN	0.20000 µg/g	S	
SJV	UNK545 UNKNOWN	0.20000 µg/g		
SJT	UNK548 UNKNOWN	0.30000 µg/g	S	
SJV	UNK552 UNKNOWN	0.20000 µg/g		
SJX	UNK552 UNKNOWN	0.20000 µg/g		
SJX	UNK559 UNKNOWN	0.10000 µg/g		
SJZ	UNK559 UNKNOWN	0.20000 µg/g	S	
SJV	UNK560 UNKNOWN	0.20000 µg/g		
SKC	UNK560 UNKNOWN	0.20000 µg/g	S	
SKD	UNK560 UNKNOWN	0.20000 µg/g	S	
SKP	UNK560 UNKNOWN	0.20000 µg/g	s	
SKB	UNK561 UNKNOWN	0.20000 μg/g	S	
SKD	UNK561 UNKNOWN	0.10000 µg/g	S	
SJT	UNK563 UNKNOWN	0.20000 µg/g	S	
SJV	UNK566 UNKNOWN	0.20000 µg/g		
SJT	UNK568 UNKNOWN	0.40000 µg/g	s	
SKN	UNK569 UNKNOWN		S	
SKC	UNK573 UNKNOWN		S	
			S	
SKD	UNK573 UNKNOWN	0.20000 μg/g		
SKJ	UNK573 UNKNOWN UNK573 UNKNOWN	0.20000 µg/g	S	
SKK		0.20000 µg/g	S	
SKN	UNK573 UNKNOWN	0.40000 µg/g	S	
SKP	UNK573 UNKNOWN	0.20000 µg/g	S	
SKB	UNK574 UNKNOWN	0.50000 µg/g	D	
SKB	UNK574 UNKNOWN	0.10000 μg/g	S	
SKC	UNK574 UNKNOWN	0.60000 µg/g	S	
SKD	UNK574 UNKNOWN	0.20000 μg/g	D	
SKD	UNK574 UNKNOWN	0.70000 μg/g	S	
SKP	UNK574 UNKNOWN	0.50000 μg/g	S	
SJT	UNK583 UNKNOWN	0.10000 μg/g	S	
SKD	UNK585 UNKNOWN	0.20000 μg/g	D	
SKD	UNK585 UNKNOWN	0.60000 μg/g	S	
SKB	UNK586 UNKNOWN	0.30000 μg/g	S	
SKC	UNK586 UNKNOWN	0. <b>4000</b> 0 μg/g	S	
SKD	UNK586 UNKNOWN	0. <b>2000</b> 0 μg/g	S	
SKP	UNK586 UNKNOWN	0.30000 μg/g	S	
SKD	UNK590 UNKNOWN	0.30000 μg/g	S	
SKB	UNK591 UNKNOWN	0.20000 µg/g	S	
SKC	UNK591 UNKNOWN .	0.20000 µg/g	S	
SKP	UNK591 UNKNOWN	0.20000 µg/g	S	
SKD	UNK594 UNKNOWN	0.20000 µg/g	s	
SJT	UNK595 UNKNOWN	0.20000 μg/g	S	
SKD	UNK595 UNKNOWN	0.10000 µg/g	S	
SKB	UNK596 UNKNOWN	0.20000 µg/g	S	
SKD	UNK596 UNKNOWN	0.50000 µg/g	s	
SKB	UNK597 UNKNOWN	0.20000 µg/g	S	
SKC	UNK597 UNKNOWN	0.20000 μg/g	S	
SKP	UNK597 UNKNOWN		S	
2VL	UNDO / CCARIO	0.10000 μg/g	3	

Lot	Tes	st Name			Flag Code	Data Qual
Chemical	Class: SE	MIVOLATIL	s			
SJT		UNKNOWN		μg/g	S	
SJT	UNK599		0.20000	μ <b>g</b> /g	S	
SJV	UNK599	UNKNOWN	0.20000	μg/g		
SKC	UNK599	UNKNOWN	0.20000	μg/g	S	
SKD	UNK599	UNKNOWN	0.20000	μg/g	D	
SKD	UNK599	UNKNOWN	0.30000	μg/g	S	
SKC	UNK602	UNKNOWN	0.30000	μg/g	S	
SKD	UNK602	UNKNOWN	0.20000	μg/g	S	
SJT	UNK603	UNKNOWN		μg/g	S	
SKD		UNKNOWN		μg/g	S	
	UNK605	UNKNOWN		μg/g	S	
SJT				μg/g	-	
SJV	UNK605	UNKNOWN	•	μg/g	S	
SKC	UNK605	UNKNOWN			S	
SKD	UNK605			μg/g μg/g	S	
SKP		UNKNOWN			S	
SJZ	UNK606		·	μg/g		
SKB		UNKNOWN		μg/g	S	
SJT		UNKNOWN		μg/g	S	
SKD	UNK611	UNKNOWN		μg/g	S	
SKB		UNKNOWN		μg/g	S	
SKC	UNK613	UNKNOWN		μg/g	S	
SKM	UNK613	UNKNOWN		μg/g	S	
SKP	UNK613	UNKNOWN		μg/g	S	
SKD	UNK623	UNKNOWN		μ <b>g</b> /g	S	
SJT		UNKNOWN		μg/g	S	
SKC	UNK628	UNKNOWN		μ <b>g</b> /g	S	
SKP	UNK628	UNKNOWN		μg/g	S	
SKD	UNK629	UNKNOWN		μg/g	S	
SKP	UNK632	UNKNOWN		μg/g	S	
SJV	UNK635	UNKNOWN		μg/g		
SKD	UNK635	UNKNOWN	0.20000	μg/g	S	
SJZ	UNK636	UNKNOWN	0.30000	μg/g	S	
SKP		UNKNOWN	0.20000	μg/g	S	
SKO	UNK637	UNKNOWN	7.00000	μg/l	S	
SJT	UNK641	UNKNOWN	0.20000	μg/g	S	
SKB		UNKNOWN	0.50000	μg/g	S	
SKP		UNKNOWN	0.20000	μg/g	S	
SJU		UNKNOWN		μg/g	S	
SKD		UNKNOWN	0.20000	μg/g	S	
SJU		UNKNOWN		μg/g	S	
SJV		UNKNOWN		μg/g		
SJX		UNKNOWN		μg/g		
SJZ		UNKNOWN		μg/g	S	
SJV		UNKNOWN		μg/g		
SJT		UNKNOWN		μg/g	s	
SJT		UNKNOWN		μg/g	S	
		UNKNOWN	the state of the s	μg/g	S	
SJT				μg/g	_	
SJX		UNKNOWN		μg/g	S	
SJZ		UNKNOWN	·	μg/g	S	
SJU		UNKNOWN			5	
SJV		UNKNOWN		μg/g	S	
SJZ		UNKNOWN		μg/g		
SJT	<b>UNK682</b>	UNKNOWN	0.50000	μg/g	S	

Lot	Test Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	l Class: SEMIVOLATILES					
SJU	UNK685 UNKNOWN		0.60000	μg/g	s	
SJV	UNK685 UNKNOWN		0.60000		J	
Chemical	Class: UNKNOWN					
SKM	UNK625 UNKNOWN		0.20000	μg/g	s	
SKM	UNK628 UNKNOWN		0.30000	μg/g	S	
SKM	UNK632 UNKNOWN		0.20000	μg/g	S	
SKM	UNK640 UNKNOWN		0.20000		S	
Chemical	Class: VOLATILES					
VKK	111TCE 1,1,1-TRICHLOROETHANE	LT	0.00400	μg/g		
VKF	111TCE 1,1,1-TRICHLOROETHANE	LT	0.00400	μg/g		
VKE	111TCE 1,1,1-TRICHLOROETHANE	LT	4.10000	μg/l		
VJY	111TCE 1,1,1-TRICHLOROETHANE	LT	4.10000	μg/l		
VJV	111TCE 1,1,1-TRICHLOROETHANE	LT	0.00400	μg/g		
<b>VJ</b> U	111TCE 1,1,1-TRICHLOROETHANE	LT	0.00400	μg/g		
VJT	111TCE 1,1,1-TRICHLOROETHANE	LT	4.10000	μ <b>g</b> /l		
VJS	111TCE 1,1,1-TRICHLOROETHANE	LT	0.00400	μg/g		
VKN	111TCE 1,1,1-TRICHLOROETHANE	LT	4.10000	μg/l		
VKM	111TCE 1,1,1-TRICHLOROETHANE	LT	0.00400	μg/g		
VKL	111TCE 1,1,1-TRICHLOROETHANE	LT	0.00400	μg/g		
VJS	112TCE 1,1,2-TRICHLOROETHANE	LT	0.02000	μg/g		
VJT	112TCE 1,1,2-TRICHLOROETHANE	LT	0.63000	μg/l		
VJU	112TCE 1,1,2-TRICHLOROETHANE	LT	0.02000	μg/g		
VJY	112TCE 1,1,2-TRICHLOROETHANE	LT	0.63000	μg/l		
VJV	112TCE 1,1,2-TRICHLOROETHANE	LT	0.02000	μg/g		
VKN	112TCE 1,1,2-TRICHLOROETHANE	LT	0.63000	μg/l		
VKM	112TCE 1,1,2-TRICHLOROETHANE	LT	0.02000	μg/g		
VKL	112TCE 1,1,2-TRICHLOROETHANE	LT		μg/g		
VKK	112TCE 1,1,2-TRICHLOROETHANE	LT		μg/g		
VKF	112TCE 1,1,2-TRICHLOROETHANE	LT	0.02000	μg/g		
VKE	112TCE 1,1,2-TRICHLOROETHANE	LT		μg/l		
<b>VJ</b> U	11DCE 1,1-DICHLOROETHYLENE	LT	0.01900	μg/g		
VJT	11DCE 1,1-DICHLOROETHYLENE	LT		μ <u>ε</u> /l		
VKN	11DCE 1,1-DICHLOROETHYLENE	LT	1.42000			
VKM	11DCE 1,1-DICHLOROETHYLENE	LT	0.01900			
VKL	11DCE 1,1-DICHLOROETHYLENE	LT	0.01900			
VKK	11DCE 1,1-DICHLOROETHYLENE	LT	0.01900			
VKF	11DCE 1,1-DICHLOROETHYLENE	LT		μg/g		
VKE	11DCE 1,1-DICHLOROETHYLENE	LT	1.42000			
VJY	11DCE 1,1-DICHLOROETHYLENE	LT	1.42000			
VJV	11DCE 1,1-DICHLOROETHYLENE	LT	0.01900			
VJS	11DCE 1,1-DICHLOROETHYLENE	LT	0.01900			
VJT	11DCLE 1,1-DICHLOROETHANE	LT		μg/l		
VJS	11DCLE 1,1-DICHLOROETHANE	LT		μg/g		
VJU	11DCLE 1,1-DICHLOROETHANE	LT	0.00200			
VJY	11DCLE 1,1-DICHLOROETHANE	LT	1.10000			
VKF	11DCLE 1,1-DICHLOROETHANE	LT	0.00200			
VKL	11DCLE 1,1-DICHLOROETHANE	LT	0.00200			
VKK	11DCLE 1,1-DICHLOROETHANE	LT	0.00200			
VKN	11DCLE 1,1-DICHLOROETHANE	LT				
VKM	11DCLE 1,1-DICHLOROETHANE			μg/l		
A LETAI	TIPEE I,I-DICHLURUE I HANE	LT	0.00200	μg/g		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Test Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: VOLATILES					
VKE	11DCLE 1,1-DICHLOROETHANE	LT	1.10000	μg/l		
VJV	11DCLE 1,1-DICHLOROETHANE	LT	0.00200	μg/g		
VKK	12DCE 1,2-DICHLOROETHYLENES (CIS AND TRANS ISOMERS)	LT	0.00200	μ <b>g</b> /g		
VKF	12DCE 1,2-DICHLOROETHYLENES (CIS AND TRANS ISOMERS)	LT	0.00200	μ <b>g</b> /g		
VKN	12DCE 1,2-DICHLOROETHYLENES (CIS AND TRANS ISOMERS)	LT	1.10000	μg/l		
VKM	12DCE 1,2-DICHLOROETHYLENES (CIS AND TRANS ISOMERS)	LT	0.00200	μg/g		
VKL	12DCE 1,2-DICHLOROETHYLENES (CIS AND TRANS ISOMERS)	LT	0.00200	μg/g		
VJT	12DCE 1,2-DICHLOROETHYLENES (CIS AND TRANS ISOMERS)	LT	1.10000	μ <b>g</b> /l		
VJV	12DCE 1,2-DICHLOROETHYLENES (CIS AND TRANS ISOMERS)	LT	0.00200	μg/g		
VJY	12DCE 1,2-DICHLOROETHYLENES (CIS AND TRANS ISOMERS)	LT	1.10000	μg/l		
VKE	12DCE 1,2-DICHLOROETHYLENES (CIS AND TRANS ISOMERS)	LT	1.10000	μg/l		
VJU	12DCE 1,2-DICHLOROETHYLENES (CIS AND TRANS ISOMERS)	LT	0.00200	µg/g		
VJS	12DCE 1,2-DICHLOROETHYLENES (CIS AND TRANS ISOMERS)	LT	0.00200	μg/g		
VKN	12DCLB 1,2-DICHLOROBENZENE	LT	9.70000			
VKM	12DCLB 1,2-DICHLOROBENZENE	LT	0.00100			
VKL	12DCLB 1,2-DICHLOROBENZENE	LT	0.00100	μg/g		
VKK	12DCLB 1,2-DICHLOROBENZENE	LT	0.00100	μg/g		
VKF	12DCLB 1,2-DICHLOROBENZENE	LT	0.00100	μg/g		
VKE	12DCLB 1,2-DICHLOROBENZENE	LT	9.70000	μg/l		
VJY	12DCLB 1,2-DICHLOROBENZENE	LT .	9.70000			
VJV	12DCLB 1,2-DICHLOROBENZENE	LT	0.00100			
<b>VJ</b> U	12DCLB 1,2-DICHLOROBENZENE	LT	0.00100			
VJT	12DCLB 1,2-DICHLOROBENZENE	LT	9.70000	μg/l		1
VJS	12DCLB 1,2-DICHLOROBENZENE	LT	0.00100	μg/g		-
VKK	12DCLE 1,2-DICHLOROETHANE	LT	0.00300	μg/g		
VKF	12DCLE 1,2-DICHLOROETHANE	LT	0.00300	μg/g		
VKE	12DCLE 1,2-DICHLOROETHANE	LT	7.60000	μg/l		
VJY	12DCLE 1,2-DICHLOROETHANE	LT	7.60000	μg/l		
VJV	12DCLE 1,2-DICHLOROETHANE	LT	0.00300	µg/g		
VJU	12DCLE 1,2-DICHLOROETHANE	LT	0.00300	μg/g		
VJT	12DCLE 1,2-DICHLOROETHANE	LT	7.60000			
VJS	12DCLE 1,2-DICHLOROETHANE	LT	0.00300	μg/g		
VKN	12DCLE 1,2-DICHLOROETHANE	LT	7.60000	μg/l		
VKM	12DCLE 1,2-DICHLOROETHANE	LT	0.00300			
VKL	12DCLE 1,2-DICHLOROETHANE	LT	0.00300			
VJS	12DCLP 1,2-DICHLOROPROPANE	LT	0.00200			
VJT	12DCLP 1,2-DICHLOROPROPANE	LT	2.80000			
<b>VJ</b> U	12DCLP 1,2-DICHLOROPROPANE	LT	0.00200			
VJY	12DCLP 1,2-DICHLOROPROPANE	LT	2.80000			
VJV	12DCLP 1,2-DICHLOROPROPANE	LT	0.00200			
VKN	12DCLP 1,2-DICHLOROPROPANE	LT	2.80000			
VKM	12DCLP 1,2-DICHLOROPROPANE	LT	0.00200			
VKL	12DCLP 1,2-DICHLOROPROPANE	LT	0.00200			
VKK	12DCLP 1,2-DICHLOROPROPANE	LT	0.00200			
VKF	12DCLP 1,2-DICHLOROPROPANE	LT	0.00200			
VKE	12DCLP 1,2-DICHLOROPROPANE	LT	2.80000			
VJS	12DMB 1,2-DIMETHYLBENZENE	ND	0.00500		R	
<b>VJ</b> U	12DMB 1,2-DIMETHYLBENZENE	ND	0.00500		R	
VJT	12DMB 1,2-DIMETHYLBENZENE	ND	5.00000		R	
VKN	12DMB 1,2-DIMETHYLBENZENE	ND	5.00000		R	
VKM	12DMB 1,2-DIMETHYLBENZENE	ND	0.00500		R	1
VKL	12DMB 1,2-DIMETHYLBENZENE	ND	0.00500		R	
VKK	12DMB 1,2-DIMETHYLBENZENE	ND	0.00500	μg/g	R	

Method Blanks - Chemical Quality Control - Phase I RI data

	Test Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical (	Class: VOLATILES					
VKF	12DMB 1,2-DIMETHYLBENZENE	ND	0.00500	μg/g	R	
VKE	12DMB 1,2-DIMETHYLBENZENE	ND	5.00000	μg/l	R	
VJY	12DMB 1,2-DIMETHYLBENZENE	ND	5.00000	μg/l	R	
VJV	12DMB 1,2-DIMETHYLBENZENE	ND	0.00200	μg/g	R	
VKN	13DCLB 1,3-DICHLOROBENZENE	LT	9.20000	μg/l		
VKM	13DCLB 1,3-DICHLOROBENZENE	LT	0.00200	μg/g		
VKL	13DCLB 1,3-DICHLOROBENZENE	LT	0.00200	μg/g		
VKK	13DCLB 1,3-DICHLOROBENZENE	LT	0.00200	μg/g		
VKF	13DCLB 1,3-DICHLOROBENZENE	LT	0.00200	μg/g		
VKE	13DCLB 1,3-DICHLOROBENZENE	LT	9.20000	μg/l		
VJY	13DCLB 1,3-DICHLOROBENZENE	LT	9.20000	μg/l		
VJV	13DCLB 1,3-DICHLOROBENZENE	LT	0.00200	μg/g		
VJU	13DCLB 1,3-DICHLOROBENZENE	LT	0.00200	μg/g		
VJT	13DCLB 1,3-DICHLOROBENZENE	LT	9.20000	μg/l		
VJS	13DCLB 1,3-DICHLOROBENZENE	LT	0.00200	μg/g		
VKK	13DCP 1,3-DICHLOROPROPANE	LT	0.00100	μg/g		
VKF	13DCP 1,3-DICHLOROPROPANE	LT	0.00100	μg/g		
VKN	13DCP 1,3-DICHLOROPROPANE	LT	3.80000	μg/l		
VKM	13DCP 1,3-DICHLOROPROPANE	LT	0.00100	μg/g		
VKL	13DCP 1,3-DICHLOROPROPANE	LT	0.00100	μg/g		
VJT	13DCP 1,3-DICHLOROPROPANE	LT	3.80000	μg/l		
VJV	13DCP 1,3-DICHLOROPROPANE	LT		μg/g		
VJY	13DCP 1,3-DICHLOROPROPANE	LT		μg/l		
VKE	13DCP 1,3-DICHLOROPROPANE	LT		μg/l		
VJU	13DCP 1,3-DICHLOROPROPANE	LT		μg/g		
VJS	13DCP 1,3-DICHLOROPROPANE	LT		μg/g	_	
VKN	13DMB 1,3-DIMETHYLBENZENE	ND		μg/l	R	
VKM VKL	13DMB 1,3-DIMETHYLBENZENE	ND		μg/g	R	
VKK	13DMB 1,3-DIMETHYLBENZENE 13DMB 1,3-DIMETHYLBENZENE	ND		μg/g	R	
VKF	13DMB 1,3-DIMETHYLBENZENE 13DMB 1,3-DIMETHYLBENZENE	ND		μg/g	R	
VKE	13DMB 1,3-DIMETHYLBENZENE	ND ND	0.00500	μg/g	R	
VJY	13DMB 1,3-DIMETHYLBENZENE	ND ND		μg/l	R R	
VJV	13DMB 1,3-DIMETHYLBENZENE	ND ND		μg/l σ/σ	R	
<b>VJ</b> U	13DMB 1,3-DIMETHYLBENZENE	ND	0.00200	μg/g μg/g	R	
VJT	13DMB 1,3-DIMETHYLBENZENE	ND		μg/l	R	
VJS	13DMB 1,3-DIMETHYLBENZENE	ND	0.00500		R	
VJV	14DCLB 1,4-DICHLOROBENZENE	LT	0.00100		K	
VJU	14DCLB 1,4-DICHLOROBENZENE	LT		re/ε μg/g		
VJT	14DCLB 1,4-DICHLOROBENZENE	LT		μg/l		
VJS	14DCLB 1,4-DICHLOROBENZENE	D:		μg/g μg/g	P	
VKN	14DCLB 1,4-DICHLOROBENZENE	LT		μg/l	•	
VKM	14DCLB 1,4-DICHLOROBENZENE	2.		μg/g	P	
VKL	14DCLB 1,4-DICHLOROBENZENE			μg/g	P	
VKK	14DCLB 1,4-DICHLOROBENZENE			μg/g	P	
VKF	14DCLB 1,4-DICHLOROBENZENE			μg/g	P	
VKE	14DCLB 1,4-DICHLOROBENZENE	LT		μg/l		
VJY	14DCLB 1,4-DICHLOROBENZENE	LT		μg/l		
VJV	2CLEVE 2-CHLOROETHYLVINYLETHER	LT		μg/g		
VKE	2CLEVE 2-CHLOROETHYLVINYLETHER	LT		μg/l		
VKK	2CLEVE 2-CHLOROETHYLVINYLETHER	LT		μg/g		
VKF	2CLEVE 2-CHLOROETHYLVINYLETHER	LT		μg/g		
		LT	82.00000			

Lot	Tes	t Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: VO	LATILES					
VKM		2-CHLOROETHYLVINYL ETHER	LT	0.04800	μg/g		
VKL		2-CHLOROETHYLVINYL ETHER	LT	0.04800	µg/g		
VJY		2-CHLOROETHYLVINYL ETHER	LT	82.00000	$\mu g/l$		
VJU		2-CHLOROETHYLVINYL ETHER	LT	0.04800	μg/g		
VJS		2-CHLOROETHYLVINYL ETHER	LT	0.04800	μg/g		
VJT		2-CHLOROETHYLVINYL ETHER	LT	82.00000	μg/I		
VJT	ACET	ACETONE	ND	10.00000	μg/l	R	
VJV	ACET	ACETONE		0.01400	μg/g	S	
VKE	ACET	ACETONE		11.00000	μg/l	S	
VKK	ACET	ACETONE		0.00800	μg/g	S	
VKF	ACET	ACETONE		0.01000		S	
		ACETONE	ND	10.00000		R	
VKN	ACET		ND	0.01000		R	
VKM	ACET	ACETONE	ND	0.01000		R·	
VKL	ACET	ACETONE	ND			S	
VJY	ACET	ACETONE		7.20000		S	
VJU	ACET	ACETONE		0.01300			
VJS	ACET	ACETONE		0.01200		S	
VJY	BRDCL	BROMODICHLOROMETHANE	LT	7.90000			
VKF	BRDCL	BROMODICHLOROMETHANE	LT	0.00300			
VKL	BRDCL	BROMODICHLOROMETHANE	LT	0.00300			
VKK	BRDCL	BROMODICHLOROMETHANE	LT	0.00300			
VKN	BRDCL	BROMODICHLOROMETHANE	LT	7.90000			
VKM	BRDCL	BROMODICHLOROMETHANE	LT	0.00300			
VKE	BRDCL	BROMODICHLOROMETHANE	LT	7.90000			
VJV	BRDCL	BROMODICHLOROMETHANE	LT	0.00300			
VJS	BRDCL	BROMODICHLOROMETHANE	LT	0.00300			
VJT	BRDCL	BROMODICHLOROMETHANE	LT	<b>7.9000</b> 0	μ <b>g/</b> ľ		
VJU	BRDCL	BROMODICHLOROMETHANE	LT	0.00300	μg/g		
VJT	C12DCE	CIS-1,2-DICHLOROETHYLENE	ND	5.00000	μg/l	R	
VKM		CIS-1,2-DICHLOROETHYLENE	ND	0.00500	μg/g	R	
VKL		CIS-1,2-DICHLOROETHYLENE	ND	0.00500	μg/g	R	
VKN		CIS-1,2-DICHLOROETHYLENE	ND	5.00000	μg/l	R	
VJU		CIS-1,2-DICHLOROETHYLENE	ND	0.00500	μg/g	R	
VKE		CIS-1,2-DICHLOROETHYLENE	ND	5.00000	μg/Ι	R	
VKF		CIS-1,2-DICHLOROETHYLENE	ND	0.00500		R	
VKF VKK		CIS-1,2-DICHLOROETHYLENE	ND	0.00500		R	
		CIS-1,2-DICHLOROETHYLENE	ND	5.00000		R	
VJY		CIS-1,3-DICHLOROPROPYLENE	ND	0.00500		R	
VKK		CIS-1,3-DICHLOROPROPYLENE	ND	0.00500		R	
VKF			ND	5.00000		R	
VKN		CIS-1,3-DICHLOROPROPYLENE	ND	0.00500		R	
VKM		CIS-1,3-DICHLOROPROPYLENE	ND	0.00500		R	
VKL		CIS-1,3-DICHLOROPROPYLENE	ND ND	5.00000		R	
VJT		CIS-1,3-DICHLOROPROPYLENE	ND ND	0.00500		R	
VJV		CIS-1,3-DICHLOROPROPYLENE	ND	5.00000		R	
VJY		CIS-1,3-DICHLOROPROPYLENE	ND ND	5.00000		R	
VKE		CIS-1,3-DICHLOROPROPYLENE				R	
VJU		CIS-1,3-DICHLOROPROPYLENE	ND	0.00500			
VJS		CIS-1,3-DICHLOROPROPYLENE	ND	0.00500		R	
VKN	C2AVE	ACETIC ACID VINYL ESTER	ND	10.00000		R	
VKM	C2AVE	ACETIC ACID VINYL ESTER	ND	0.01000		R	
VKL	C2AVE	ACETIC ACID VINYL ESTER	ND	0.01000		R	
VKK	C2AVE	ACETIC ACID VINYL ESTER	ND	0.01000		R	
VKF	C2AVE	ACETIC ACID VINYL ESTER	ND	0.01000	μg/g	R	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	est Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	l Class: VO	<b>DLATILES</b>					
VKE	C2AVE	ACETIC ACID VINYL ESTER	ND	10.00000	ue/l	R	
VJY	C2AVE	ACETIC ACID VINYL ESTER	ND	10.00000		R	
VJV	C2AVE	ACETIC ACID VINYL ESTER	ND	0.01000		R	
VJU	C2AVE		ND	0.01000		R	
VJT	C2AVE		ND	10.00000		R	
VJS	C2AVE	ACETIC ACID VINYL ESTER	ND	0.01000	. •	R	
<b>VJ</b> U	C2H3CL	CHLOROETHENE	LT	0.01500			
VJY		CHLOROETHENE	LT	0.50000	μg/l		
VKF	C2H3CL	CHLOROETHENE	LT	0.01500	μg/g		
VKL	C2H3CL	CHLOROETHENE	LT	0.01500			
VKK		CHLOROETHENE	LT	0.01500			
VKN	C2H3CL	CHLOROETHENE	LT	0.50000			
VKM		CHLOROETHENE	LT	0.01500			
VKE		CHLOROETHENE	LT	0.50000			
VJV		CHLOROETHENE	LT	0.01500	μg/g		
VJT		CHLOROETHENE	LT	0.50000	μg/l		
VJS		CHLOROETHENE	LT	0.01500	. –		
VKF		CHLOROETHANE	LT	0.02700	μg/g		
VKE		CHLOROETHANE	LT	2.12000			
VKN		CHLOROETHANE	LT	2.12000			
VKM		CHLOROETHANE	LT	0.02700			
VKL	C2H5CL	CHLOROETHANE	LT	0.02700			
VKK	C2H5CL	CHLOROETHANE	LT	0.02700			
VJS	C2H5CL	CHLOROETHANE	LT	0.02700			
<b>VJ</b> U	C2H5CL	CHLOROETHANE	LT	0.02700			
VJV	C2H5CL	CHLOROETHANE	LT	0.02700			
VJY	C2H5CL	CHLOROETHANE	LT	2.12000			
VJT	C2H5CL	CHLOROETHANE	LT	2.12000			
VJV	C6H6	BENZENE	LT	0.00300			
VKE	C6H6	BENZENE	LT	2.40000			
VKK	C6H6	BENZENE	LT	0.00300			
VKM	C6H6	BENZENE	LT	0.00300			
VKN ·	C6H6	BENZENE	LT	2.40000			
VKL	C6H6	BENZENE	LT	0.00300			
VKF	C6H6	BENZENE	LT	0.00300	μg/g		
VJY	C6H6	BENZENE	LT	2.40000			
<b>VJ</b> U	C6H6	BENZENE	LT	0.00300			
VJS	C6H6	BENZENE	LT		μg/g		
VJT	C6H6	BENZENE	LT		μg/l		
VJV	CCL3F	TRIFLUOROCHLOROMETHANE	ND	0.00500		R	
VJU	CCL4	CARBON TETRACHLORIDE	LT	0.00600			
VJV	CCL4	CARBON TETRACHLORIDE	LT		μg/g		
VJT	CCL4	CARBON TETRACHLORIDE	LT		μg/l		
VJS	CCL4	CARBON TETRACHLORIDE	LT		μg/g		
VJY	CCL4	CARBON TETRACHLORIDE	LT		μg/l		
VKF	CCL4	CARBON TETRACHLORIDE	LT		μg/g		
VKE	CCL4	CARBON TETRACHLORIDE	LT		μg/l		
VKN	CCL4	CARBON TETRACHLORIDE	LT		μg/l		
VKM	CCL4	CARBON TETRACHLORIDE	LT	•	μg/g		
VKL	CCL4	CARBON TETRACHLORIDE	LT		μg/g		
VKK	CCL4	CARBON TETRACHLORIDE	LT		μg/g		
VJT		METHYLENE CHLORIDE			μg/l		
VJV		METHYLENE CHLORIDE		0.00700			

Lot	Tes	nt Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qual
Chemical	Class: VO	LATILES				•	
VKE		METHYLENE CHLORIDE		7.20000	μg/l		
VJY		METHYLENE CHLORIDE		6.60000	μg/l		
VKN		METHYLENE CHLORIDE		8.00000	μg/l		
VKM		METHYLENE CHLORIDE		0.01400	μg/g		
VKL		METHYLENE CHLORIDE		0.00800	μg/g		
VKK		METHYLENE CHLORIDE		0.00800	μg/g		
VKF		METHYLENE CHLORIDE		0.00700	µg/g		
VJU	CH2CL2	METHYLENE CHLORIDE		0.00600	μg/g		
VJS	CH2CL2	METHYLENE CHLORIDE		0.00800	μg/g		
VJS	CH3BR	BROMOMETHANE	ND	0.01000	μg/g	R	
VKN	CH3BR	BROMOMETHANE	ND	10.00000	μg/l	R	
VKM	CH3BR	BROMOMETHANE	ND	0.01000	μg/g	R	
VKL	CH3BR	BROMOMETHANE	ND	0.01000	μg/g	R	
VKK	CH3BR	BROMOMETHANE	ND	0.01000	μg/g	R	
VKF	CH3BR	BROMOMETHANE	ND	0.01000	μg/g	R	
VKE	CH3BR	BROMOMETHANE	ND	10.00000	μg/l	R	
VJY	CH3BR	BROMOMETHANE	ND	10.00000	μg/l	R	
VJT	CH3BR	BROMOMETHANE	ND	10.00000	μg/l	R	
VJV	CH3BR	BROMOMETHANE	ND	0.01000	μg/g	R	
<b>VJ</b> U	CH3BR	BROMOMETHANE	ND	0.01000	μg/g	R	
VJS	CH3CL	CHLOROMETHANE	LT	0.01700	μg/g		
VJT	CH3CL	CHLOROMETHANE	LT	1.60000	μg/l		
VJU	CH3CL	CHLOROMETHANE	LT	0.01700	μg/g		
VJY	CH3CL	CHLOROMETHANE	LT	1.60000			
VKF	CH3CL	CHLOROMETHANE	LT	0.01700	μ <b>g</b> /g		
VKL	CH3CL	CHLOROMETHANE	LT	0.01700			
VKK	CH3CL	CHLOROMETHANE	LT	0.01700			
VKN	CH3CL	CHLOROMETHANE	LT	1.60000			
VKM	CH3CL	CHLOROMETHANE	LT	0.01700			
VKE	CH3CL	CHLOROMETHANE	LT	1.60000			
VJV	CH3CL	CHLOROMETHANE	LT	0.01700			
VJS	CHBR3	BROMOFORM	LT	0.01800			
VJU	CHBR3	BROMOFORM	LT	0.01800			
VJY	CHBR3	BROMOFORM	LT	8.20000	-		
VKF	CHBR3	BROMOFORM	LT	0.01800			
VKE	CHBR3	BROMOFORM	LT	8.20000			
VKN	CHBR3	BROMOFORM	LT	8.20000			
VKM	CHBR3	BROMOFORM	LT	0.01800			
VKL	CHBR3	BROMOFORM	LT	0.01800			
VKK	CHBR3	BROMOFORM	LT	0.01800			
VJV	CHBR3	BROMOFORM	LT	0.01800			
VJT	CHBR3	BROMOFORM	LT	8.20000 0.00200			
VJS	CHCL3	CHLOROFORM	LT LT	0.83000			
VJY	CHCL3	CHLOROFORM	LT	0.00200			
VJV	CHCL3	CHLOROFORM	LT	0.83000			
VKN	CHCL3	CHLOROFORM	LT	0.00200			
VKM	CHCL3	CHLOROFORM	LT	0.00200			
VKL	CHCL3	CHLOROFORM	LT	0.00200			•
VKK	CHCL3	CHLOROFORM	LT	0.00200			
VKF	CHCL3	CHLOROFORM	LT	0.83000			1
VKE	CHCL3	CHLOROFORM	LT	0.83000			
VJT	CHCL3	CHLOROFORM	LT	0.00200			•
VJU	CHCL3	CHLOROFORM	LI	0.00200	₽ <del>6</del> /6		

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	Te	est Name	Mea Bool		Unit Meas	Flag Code	Data Qua
Chemical	Class: VC	<b>DLATILES</b>					
VJS		MONOCHLOROBENZENE	LT	0.00300	μg/g		
VJU	CLC6H5	MONOCHLOROBENZENE	LT	0.00300			
VJT		MONOCHLOROBENZENE	LT	1.40000			
VJV		MONOCHLOROBENZENE	LT	0.00300			
VKE		MONOCHLOROBENZENE	LT	1.40000	μg/l		
VKK		MONOCHLOROBENZENE	LT	0.00300	μg/g μg/g		
VKM		MONOCHLOROBENZENE	LT	0.00300			
VKL		MONOCHLOROBENZENE	LT	0.00300	μg/g		
VKN		MONOCHLOROBENZENE	LT	1.40000	μg/g		
VKF	CLC6H5				μg/l		
VJY	CLC6H5		LT	0.00300	μg/g		
			LT	1.40000	μg/l		
VJS	CS2	CARBON DISULFIDE	ND	0.00500	μg/g	R	
VJY	CS2	CARBON DISULFIDE	ND	5.00000	μg/l	R	
VKF	CS2	CARBON DISULFIDE	ND	0.00500	μg/g	R	
VKL	CS2	CARBON DISULFIDE	ND	0.00500	μg/g	R	
VKK	CS2	CARBON DISULFIDE	ND	0.00500	μg/g	R	
VKN	CS2	CARBON DISULFIDE	ND	5.00000	μg/l	R	
VKM	CS2	CARBON DISULFIDE	ND	0.00500	μg/g	R	
VKE	CS2	CARBON DISULFIDE	ND	5.00000	μg/l	R	
VJV	CS2	CARBON DISULFIDE	ND	0.00500	µg/g	R	
VJT	CS2	CARBON DISULFIDE	ND	5.00000	μg/l	R	
VJU	CS2	CARBON DISULFIDE	ND	0.00500	μg/g	R	
VJS	DBRCL	DIBROMOCHLOROMETHANE	LT	0.01400	μg/g		
VJT	DBRCL	DIBROMOCHLOROMETHANE	LT	6.50000	μg/l		
VJU	DBRCL	DIBROMOCHLOROMETHANE	LT	0.01400	μg/g		
VJV	DBRCL	DIBROMOCHLOROMETHANE	LT	0.01400	μg/g		
VJY	DBRCL	DIBROMOCHLOROMETHANE	LT	6.50000	μg/l		
VKE	DBRCL	DIBROMOCHLOROMETHANE	LT	6.50000	μg/l		
VKF	DBRCL	DIBROMOCHLOROMETHANE	LT	0.01400	μg/g		
VKK	DBRCL	DIBROMOCHLOROMETHANE	LT	0.01400	μg/g		
VKL	DBRCL	DIBROMOCHLOROMETHANE	LT	0.01400	μg/g		
VKM	DBRCL	DIBROMOCHLOROMETHANE	LT	0.01400	μg/g		
VKN	DBRCL	DIBROMOCHLOROMETHANE	LT	6.50000	μg/l		
VJS	ETC6H5	ETHYLBENZENE	LT	0.00300	μg/g		
VJT	ETC6H5	ETHYLBENZENE	LT	9.30000	μg/l		
<b>VJ</b> U		ETHYLBENZENE	LT	0.00300	μg/g		
VJV		ETHYLBENZENE	LT	0.00300	μg/g		
VJY		ETHYLBENZENE	LT	9.30000			
VKE		ETHYLBENZENE	LT	9.30000	μg/l		
VKF		ETHYLBENZENE	LT	0.00300	μg/l		
VKK		ETHYLBENZENE			μg/g		
VKL		ETHYLBENZENE	LT	0.00300	μg/g		
VKM		ETHYLBENZENE	LT	0.00300	μg/g		
			LT	0.00300	μg/g		
VKN	ETC6H5	ETHYLBENZENE	LT	9.30000	μg/l		
VJS	MEC6H	TOLUENE	LT	0.00800	μg/g		
VJT	MEC6H	TOLUENE	LT	8.70000	μg/l		
VJU	МЕС6Н	TOLUENE ·	LT	0.00800	μg/g		
VJV	MEC6H	TOLUENE	LT	0.00800	μg/g		
VJY	MEC6H	TOLUENE	LT	8.70000	μg/l		
VKE	MEC6H	TOLUENE	LT	8.70000	μg/l		
VKF	MEC6H	TOLUENE	LT	0.00800	μg/g		
VKK	MEC6H	TOLUENE	LT	0.00800	μg/g		
VKL	MEC6H	TOLUENE	LT	0.00800			

Lot	Te	st Name	Meas Bool	Value	Unit Meas	Flag Code	Data Qua
Chemical	Class: VC	DLATILES					
VKM	MEC6H	TOLUENE	LT	0.00800	μg/g		
VKN	МЕС6Н	TOLUENE	LT	8.70000	μg/l		
VJS	MEK	METHYLETHYL KETONE	ND	0.01000	μg/g	R	
VJT	MEK	METHYLETHYL KETONE	ND	10.00000		R	
VJU	MEK	METHYLETHYL KETONE	ND	0.01000	μg/g	R	
VJV	MEK	METHYLETHYL KETONE	ND	0.01000	μg/g	R	
VJY	MEK	METHYLETHYL KETONE	ND	10.00000	μg/l	R	
VKE	MEK	METHYLETHYL KETONE	ND	10.00000	μg/l	R	
VKF	MEK	METHYLETHYL KETONE	ND	0.01000	μg/g	R	
VKK	MEK	METHYLETHYL KETONE	ND	0.01000	μg/g	R	
VKL	MEK	METHYLETHYL KETONE	ND	0.01000	μg/g	R	
VKM	MEK	METHYLETHYL KETONE	ND	0.01000	μg/g	R	
VKN	MEK	METHYLETHYL KETONE	· ND	10.00000	μg/l	R	
			ND	0.01000		R	
VJS	MIBK	METHYLISOBUTYL KETONE		10.00000		R	
VJT	MIBK	METHYLISOBUTYL KETONE	ND	0.01000	μg/l	R R	
VJU	MIBK	METHYLISOBUTYL KETONE	ND				
VJV	MIBK	METHYLISOBUTYL KETONE	ND	0.01000	μg/g	R	
VJY	MIBK	METHYLISOBUTYL KETONE	ND	10.00000	μg/l	R	
VKE	MIBK	METHYLISOBUTYL KETONE	ND	10.00000	. •	R	
VKF	MIBK	METHYLISOBUTYL KETONE	ND	0.01000		R <sub>.</sub>	
/KK	MIBK	METHYLISOBUTYL KETONE	ND	0.01000	μg/g	R	
/KL	MIBK	METHYLISOBUTYL KETONE	ND	0.01000	μg/g	R	
/ΚМ	MIBK	METHYLISOBUTYL KETONE	ND	0.01000	μg/g	R	
/KN	MTBK	METHYLISOBUTYL KETONE	ND	10.00000	μg/l	R	
/JS	MNBK	METHYL-N-BUTYL KETONE	ND	0.01000	μg/g	R	
VJT	MNBK	METHYL-N-BUTYL KETONE	ND	10.00000	μg/l	R	
<b>JU</b>	MNBK	METHYL-N-BUTYL KETONE	ND	0.01000	μg/g	R	
/JV	MNBK	METHYL-N-BUTYL KETONE	ND	0.01000	μg/g	R	
/JY	MNBK	METHYL-N-BUTYL KETONE	ND	10.00000	μg/l	R	
/KE	MNBK	METHYL-N-BUTYL KETONE	ND	10.00000	μg/l	R	
/KF	MNBK	METHYL-N-BUTYL KETONE	ND	0.01000	μg/g	R	
'KK	MNBK	METHYL-N-BUTYL KETONE	ND	0.01000	μg/g	R	
/KL	MNBK	METHYL-N-BUTYL KETONE	ND	0.01000	μg/g	R	
/KM	MNBK	METHYL-N-BUTYL KETONE	ND	0.01000	μg/g	R	
/KN	MNBK	METHYL-N-BUTYL KETONE	ND	10.00000	μg/l	R	
/JS	STYR	STYRENE	ND	0.00500		R	
JT	STYR	STYRENE	ND	5.00000		R	
JU	STYR	STYRENE	ND	0.00500		R	
7 <b>JV</b>	STYR	STYRENE	ND	0.00500	μg/g	R	
/JY	STYR	STYRENE	ND		μg/l	R	
KE	STYR	STYRENE	ND	5.00000	μg/l	R	
		STYRENE	ND	0.00500	μg/g	R	
KF	STYR		ND ND	0.00500	μg/g μg/g	R	
KK W	STYR	STYRENE	. ND	0.00500		R	
KL	STYR	STYRENE	ND ND	0.00500	μg/g	R	
KM	STYR	STYRENE		5.00000	μg/g		
KN	STYR	STYRENE	ND		μg/l	R	
JS		TRANS-1,3-DICHLOROPROPENE	ND	0.00500	μg/g	R	
/JT	T13DCP	TRANS-1,3-DICHLOROPROPENE	ND	5.00000	μg/l	Ř	
'JU		TRANS-1,3-DICHLOROPROPENE	ND	0.00500	μg/g	R	
JV		TRANS-1,3-DICHLOROPROPENE	ND	0.00500	μg/g	R	
ΊΥ		TRANS-1,3-DICHLOROPROPENE	ND		μg/l	R:	
/KE	T13DCP	TRANS-1,3-DICHLOROPROPENE	ND	5.00000	μg/l	R	
KF	T13DCP	TRANS-1,3-DICHLOROPROPENE	ND	0.00500	μg/g	R	

Method Blanks - Chemical Quality Control - Phase I RI data

Lot	т_	et Nama	Meas	Veha	Unit	Flag	Dat
LAR	16	st Name	Bool	Value	Meas	Code	Qus
Chemical	Class: VC	DLATILES					
VKK	T13DCP	TRANS-1,3-DICHLOROPROPENE	ND	0.00500	μg/g	R	
VKL	T13DCP	TRANS-1,3-DICHLOROPROPENE	ND	0.00500	μg/g	R	
VKM	T13DCP	TRANS-1,3-DICHLOROPROPENE	ND	0.00500	μg/g	R	
VKN	T13DCP	TRANS-1,3-DICHLOROPROPENE	ND	5.00000	μg/l	R	
VJS	TCLEA	1,1,2,2-TETRACHLOROETHANE	LT	0.00200	μg/g		
VJT	TCLEA	1,1,2,2-TETRACHLOROETHANE	LT	4.70000	μg/l		
<b>VJ</b> U	TCLEA	1,1,2,2-TETRACHLOROETHANE	LT	0.00200	μg/g		
VJV	TCLEA	1,1,2,2-TETRACHLOROETHANE	LT	0.00200	μg/g		
VJY	TCLEA	1,1,2,2-TETRACHLOROETHANE	LT	4.70000	μg/l		
VKE	TCLEA	1,1,2,2-TETRACHLOROETHANE	LT	4.70000	μg/l		
VKF	TCLEA	1,1,2,2-TETRACHLOROETHANE	LT	0.00200	μg/g		
VKK	TCLEA	1,1,2,2-TETRACHLOROETHANE	LT	0.00200	μg/g		
VKL	TCLEA	1,1,2,2-TETRACHLOROETHANE	LT	0.00200	μg/g		
VKM	TCLEA	1,1,2,2-TETRACHLOROETHANE	LT	0.00200	μg/g		
VKN	TCLEA	1,1,2,2-TETRACHLOROETHANE	LT	4.70000	μg/l		
VJS	TCLEE	TETRACHLOROETHYLENE	LT	0.00200	μg/g		
VJT	TCLEE	TETRACHLOROETHYLENE	LT	0.50000	μg/l		
<b>VJ</b> U	TCLEE	TETRACHLOROETHYLENE	LT	0.00200	μg/g		
VJV	TCLEE	TETRACHLOROETHYLENE	LT	0.00200	μg/g		
VJY	TCLEE	TETRACHLOROETHYLENE		0.38000	μg/l	P	
VKE	TCLEE	TETRACHLOROETHYLENE	LT	0.50000	μg/l		
VKF	TCLEE	TETRACHLOROETHYLENE	LT	0.00200	μg/g		
VKK	TCLEE	TETRACHLOROETHYLENE	LT	0.00200	μg/g		
VKL	TCLEE	TETRACHLOROETHYLENE	LT	0.00200	μg/g		
VKM	TCLEE	TETRACHLOROETHYLENE	LT	0.00200	μg/g		
VKN	TCLEE	TETRACHLOROETHYLENE	LT	0.50000	μg/l		
VJS	TRCLE	TRICHLOROETHYLENE	LT	0.00400	μg/g		
VJT	TRCLE	TRICHLOROETHYLENE	LT	0.50000	μg/l		
<b>VJ</b> U	TRCLE	TRICHLOROETHYLENE	LT	0.00400	μg/g		
VJV	TRCLE	TRICHLOROETHYLENE	LT	0.00400	μg/g		
VJY	TRCLE	TRICHLOROETHYLENE	LT	0.50000	μg/l		
VKE	TRCLE	TRICHLOROETHYLENE	LT	0.50000	μg/l		
VKF	TRCLE	TRICHLOROETHYLENE	LT	0.00400	μg/g		
VKK	TRCLE	TRICHLOROETHYLENE	LT	0.00400	μg/g		
VKL	TRCLE	TRICHLOROETHYLENE	LT	0.00400	μg/g		
VKM	TRCLE	TRICHLOROETHYLENE	LT	0.00400	μg/g		
VKN	TRCLE	TRICHLOROETHYLENE	LT	0.50000			

## **APPENDIX J**

DATA QUALITY ASSESSMENT RESULTS

#### **Contents**

#### Data Quality Assessment for:

Old Burn Area (SWMU 6)
Old Burn Area (SWMU 6) Phase II
Chemical Range (SWMU 7)
Small Arms Firing Range (SWMU 8)
Small Arms Firing Range (SWMU 8) Phase II
Tire Disposal Area (SWMU 13)
Building 1303 Washout Pond (SWMU 22)
Bomb and Shell Reconditioning Building (SWMU 23)
Former Transformer Boxing Area (SWMU 31)
PCB Spill (SWMU 32)
Wastewater Spreading Area (SWMU 35)
Old Burn Staging Area (SWMU 36)
AED Test Range (SWMU 40)
AED Test Range (SWMU 40) Phase II

Summary of Qualified Data Based on EPA Functional Guidelines

**Environmental Science and Chemistry** 

## **DATA QUALITY ASSESSMENT**

# TOOELE ARMY DEPOT—NORTH AREA DAAA15-90-D-0007, TASK 0003

### SWMU 6 OLD BURN AREA

#### Prepared for:

RUST Environment and Infrastructure 743 Horizon Court, Suite 240 Grand Junction, Colorado 81506

#### Prepared by:

EcoChem, Inc. 801 Second Avenue, Suite 1401 Seattle, Washington 98104

EcoChem Project Number: 8901-30

December 20, 1994

Approved for Release:

Mark T. Brindle Project Manager

EcoChem, Inc.

#### DATA QUALITY ASSESSMENT SUMMARY

#### Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on soil samples and associated laboratory quality control samples. Refer to the Sample Index for sample identifications.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Primary	Secondary
SWMU 6	Selenium	ANKC	JD20 (SOIL)	Jason Ai	W. Jaime Bruton
	ICP Metals	ANUC	JS12 (SOIL)	Jason Ai	W. Jaime Bruton
	Explosives	ANDS	LW23 (SOIL)	Mark T. Brindle	Eric Strout
	Explosives	ANFY	LW23 (SOIL)	Mark T. Brindle	Eric Strout
	Explosives	AMVC	LW23 (SOIL)	Mark T. Brindle	Eric Strout

Data assessment was based on the QC criteria recommended in the above listed method; the Tooele Army Depot—North Area QC Plan; USEPA Functional Guidelines for Organic and Inorganic Data Review; and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

Copies of the qualified transfer files are included as APPENDIX A. Each lot report also contains a summary table of qualified results. Data Quality Assessment Worksheets, Communication, and Corrective Action Records have been placed in labeled envelopes with the original data packages.

#### **DATA VALIDATION QUALIFIER CODES**

U The material was analyzed for, but was not detected.
The associated numerical value is the certified reporting limit.

R Unreliable result. Data should not be used. Analyte may or may not be present in the sample.

J Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality Assessment Report should be consulted for reason.

UJ Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report

should be consulted for reason.

#### SITE DATA QUALITY SUMMARY: SWMU 6-OLD BURN AREA

#### Selenium

One lot of selenium analyses of soil samples using Method JD20 was reviewed. All results are acceptable for use without qualification.

#### **Explosives**

Three lots of explosives analyses of soil samples using Method LW23 were reviewed. In Lot ANDS, the 1,3,5-trinitrobenzene detection limits were qualified as estimated, (UJ) due to low and high spike accuracy deficiencies. All 1,3,5-trinitrobenzene data in Lot AMVC were rejected, (R), and are unusable for any purpose. All other data in Lot AMVC are acceptable. All data in Lot ANFY are acceptable for use without qualification.

#### ICP-Metals

One lot of ICP-metal analyses of soil samples using method JS12 were reviewed. All antimony detection limits were rejected because of zero antimony recovery in the natural (matrix) spikes. this indicates the possibility of false negatives. The USAEC did not flag this problem because natural spikes are not part of the USAEC QA program; however, they recommend against using Method JS12 for antimony in soil samples because of known poor recovery problems.

## DATA QUALITY ASSESSMENT SELENIUM—GFAA ANALYSES: SOIL

METHOD: JD20 LOT No.: ANKC

#### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANKC were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody (COC) forms for Lot ANKC were completed properly, and all samples listed in the COC forms were analyzed. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for Lot ANKC samples. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. A minimum of 10% of the field ID and laboratory ID were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QC SUMMARY

No field blanks or field duplicate samples were submitted with Lot ANKC samples.

#### IV. TECHNICAL ASSESSMENT

#### 1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 180 days from date of collection to analysis.

#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

For the initial calibration, the minimum number of standards were used, which met the method criterion. The linearity requirement of  $r \ge to 0.995$  was met. The laboratory analyzed a continuing calibration standard every ten samples as required. All percent recovery (%R) values of initial and continuing calibration verifications were within the control limit of 90% to 110%.

#### 3.0 Blank Analyses: ACCEPTABLE/All criteria met.

Calibration blanks (ICB and CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated sample results. Continuing calibration blanks were analyzed after each continuing calibration as required. Preparation blanks were prepared with the digestion batch as required. No target analytes were detected in the blanks at or above the reporting limits.

## **4.0** Matrix Spike/Matrix Spike Duplicate Sample Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

One set of MS/MSD analyses was performed on Sample OBP-94-02A. The %R values were 56.0% and 60.2%, less than the Functional Guidelines (2/94) lower control limit of 75%. As MS/MSD analyses were not required in USATHAMA program, selenium results in associated samples were not qualified due to low percent recovery values; however, these same selenium results should be considered biased low. The relative percent difference (RPD) value for this MS/MSD set was 7.3%, which was within the Functional Guidelines (2/94) control limit of 35%.

## **5.0 High Spike and Low Spike Analyses:** ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Two high spike and one low spike analyses were performed with each sample lot. The %R values of both high spike analyses were 89.6% and 87.4%, within the control chart limits of 67.7% to 119.9%. The %R values of the low spike analysis was 116.3%, which was slightly greater than the control chart upper limit of 111.9%. Since these %R values were within the control limits specified in the Functional Guidelines (2/94), no action was taken.

#### 6.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limits for selenium were reviewed. All reporting limits matched the certified reporting limit listed in the laboratory SOP.

#### 7.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

#### V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAEC Chemistry Branch Response indicates that Lot ANKC is acceptable. The laboratory noted high spike recovery values trending below the mean, low spike recovery values trending above the mean, low spike recovery values above the control chart upper limit. No qualification is recommended based on these observations.

The data, as reported, are acceptable for use.

# DATA QUALITY ASSESSMENT METALS-ICP ANALYSES: SOIL

METHOD: JS12 Lot No.: ANUC

#### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANUC were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final samples results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field chain-of-custody forms were present and complete for Lot ANUC. All Lot ANUC samples listed on the chain-of-custody were analyzed. Sample IDs were tracked from the field chain-of-custody to the transfer file printout and no errors were noted. Internal chain-of-custody forms clearly indicated the laboratory numbers and field sample IDs for each sample. No errors in field IDs were noted.

#### III. FIELD QUALITY CONTROL

One set of field duplicate samples (TBS-94-09/TBS-94-22) was analyzed and reviewed. The relative percent difference (RPD) values for this set of field duplicate samples ranged from 0.4% to 15.2%, which were within the control limit of 50%.

No field blanks were submitted with Lot ANUC samples.

#### IV. TECHNICAL ASSESSMENT

1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 180 days from date of collection to analysis.

2.0 Instrument Calibration: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Instrument calibration consisted of one blank and one standard. Instrument sensitivity could not be evaluated with the documentation provided. All calibration check standards were within ±10% of the true value with the exception of thallium with a percent recovery (%R) value of 120.4%. Since the %R value was greater than the upper control limit of 110% and thallium was not detected in any of the samples, no action was recommended. Plus or minus two times the standard deviation control limits were not utilized because historic calibration check results were not provided.

The laboratory analyzed a continuing calibration verification (CCV) standard every ten samples as required. The percent recovery of the CCVs were within  $\pm 10\%$  of the true value. Plus or minus two times the standard deviation control limits were not utilized because historic calibration verification results were not provided.

4.0 Blank Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Calibration blanks (CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated sample results. Continuing calibration blanks were analyzed after each continuing calibration as required. A preparation blank was prepared with each digestion batch as required. No CCB result was greater than the reporting limit or less than the negative reporting limit, and no PB result was greater than the reporting limit. Aluminum, barium, calcium, chromium, iron, potassium, magnesium, manganese, vanadium and zinc were detected in one QC blank (BL-38668-1). Since this soil blank sample (from RMA soil, R3D-381) was unwashed soil, no qualifications were recommended.

5.0 Matrix Spike Sample Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table ANUC-1.

#### Discussion:

Two sets of MS/MSD analyses were performed on Samples CRS-94-01 and CRS-94-14. The antimony %R values in both MS/MSD analyses were 0% which indicates antimony analyses by ICP method were questionable. As antimony was not detected in any of the samples a possibility of false non-detects exists. The quantitation limits for antimony were rejected and not usable for any purposes. All other %R and RPD values were within the control limits.

## **6.0 High Spike and Low Spike Analyses:** ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

One low spike and two high spike analyses were performed with this sample lot. Recovery values were evaluated based on the control chart upper and lower limits. The %R values of low spike and high spike analyses were within the control limits, with the exception of those listed in the table below.

Analyte	Low Spike	Control Limit	1st High Spike	2nd High Spike	Control Limits
Beryllium	Acceptable	92.5% to 105.1%	Acceptable	93.7%	94.5% to 100.5%
Vanadium	Acceptable	59.0% to 120.4%	Acceptable	92.7%	92.8% to 101.4%

As these spike recovery values were close to the USAEC control limits and still within the control limit specified in Functional Guidelines (2/94), no qualifications are recommended.

### 7.0 Duplicate Sample Analyses: NOT APPLICABLE

Laboratory duplicate analyses were not performed with this sample lot.

### 8.0 ICP Interference Check Sample (ICS) Analyses: NOT PERFORMED

ICP interference check sample analyses were not performed with this sample lot.

### 9.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits match the certified reporting limit listed in the laboratory SOP.

#### 10.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

#### V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAEC Chemistry Branch Response indicates that Lot ANUC is acceptable. The laboratory noted high spike recovery values trending above the central line for cadmium and lead; high spike recovery values moving in a downward direction for chromium; low spike recovery values above the central line for boron, beryllium, and lead; low spike recovery values trending below the central line for copper and molybdenum; low spike recovery values moving in an upward

direction for cobalt, tin, tellurium, and thallium; and low spike recovery values moving in a downward direction for molybdenum, nickel, lead, and vanadium. No other qualification is recommended based on these observations.

The data, as qualified, are acceptable for use.

12/20/94 5:19 PM

## Qualified Data Summary Table Lot No: ANUC

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
Antimony	SB	R	CRS-94-01	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-02	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-03	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-04	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-05	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-06	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-07	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-08	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-09	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-10	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-11	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-12	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-13	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-14	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-15	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-16	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-17	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-18	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OBS-94-29	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OBS-94-30	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OBS-94-31	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OBS-94-32	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-09	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-12	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-15	LT 19.6 ug/g	MS/MSD %R = 0%	5
<b>Intimony</b>	SB	R	TBS-94-18	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-21	LT 19.6 ug/g	MS/MSD %R = 0%	5
\ntimony	SB	R	TBS-94-22	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-03	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-06	LT 19.6 ug/g	MS/MSD %R = 0%	5

# DATA QUALITY ASSESSMENT EXPLOSIVES ANALYSES: SOIL

METHOD: LW23 Lot: ANDS

#### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANDS were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed. DataChem QA Status Reports and USAEC Control Chart Response were submitted. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in Lot ANDS. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for each sample in Lot ANDS. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field IDs and laboratory IDs for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QUALITY CONTROL

No field QC samples from Lot ANDS were identified on the chain-of-custody forms.

#### IV. TECHNICAL ASSESSMENT

#### **1.0** Holding Times: ACCEPTABLE/All criteria met.

All soil samples in Lot ANDS were extracted within five days of collection and were analyzed within 23 days of extraction. The seven-day extraction holding time and 40-day analysis holding time limits were met.

#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

The appropriate number of calibration standards were used to generate a zero-intercept model standard curve for explosives compounds. Linearity was acceptable for the standard curves. Recalculation results of the regression statistics for the curves agreed with the laboratory values.

#### 3.0 Daily Calibration: ACCEPTABLE/All criteria met.

The results of the daily calibration standard agreed with the initial calibration standard within 25%.

#### 4.0 Blank Analysis: ACCEPTABLE/All criteria met.

One soil method blank was associated with the samples in Lot ANDS. Target explosives compounds were not detected in the method blank at or above the certified reporting limit (CRL).

#### 5.0 Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/All criteria met.

The laboratory used Sample OBS-94-01 for MS/MSD analyses with the samples from Lot ANDS. All percent recovery values and relative percent difference values were within control limits.

## **6.0 High Spike and Low Spike Recovery:** ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table ANDS-1.

#### Discussion:

The DataChem QA status report noted that the percent recovery values for 1,3,5-trinitrobenzene were below the lower control limit in the high concentration spike analysis. The percent recovery was below the lower warning limit (but above the lower control limit) in the low concentration spike analysis. No action is suggested in the QA status report. The USAEC Control Chart Response letter accepts the lot with no qualifiers. However, a corrective action report in the data package states that the low recoveries are due to inefficient sonication, and recommends flagging all 1,3,5-trinitrobenzene results. This compound is flagged "7" on all transfer files for Lot ANDS.

Due to the inefficient sonication, all 1,3,5-trinitrobenzene results are potentially low biased. This compound was not detected. All detection limits (CRL) are estimated (UJ).

#### 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data for Lot ANDS were reviewed for explosives compounds; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

## 8.0 Compound Quantitation and Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

An evaluation of compound quantitation was performed by recalculating the sample results from the raw data. Discrepancies were not found. The CRL on the transfer file met those listed in the method. No transcription errors were noted.

#### 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

#### V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified methods.

An examination of the DataChem QA Status Report that includes Lot ANDS revealed the following item: 1,3,5-trinitrobenzene percent recovery results in the high spike were below the lower control limit, and the percent recovery values were below the lower warning limit in the low spike.

All 1,3,5-trinitrobenzene results were qualified as estimated (UJ), due to low and high spike accuracy deficiencies.

All data, as qualified, are acceptable for use.

## Qualified Data Summary Table Lot No: ANDS-1

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-01	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-02	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-03	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-04	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-05	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-06	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-07	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-08	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-09	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-10	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-11	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-12	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-13	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	OBS-94-14	LT 9.22E-1	LS %R < LCL	6.0

# DATA QUALITY ASSESSMENT EXPLOSIVES ANALYSES: SOIL

METHOD: LW23 Lot: ANFY

#### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANFY were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed. DataChem QA Status Reports and USAEC Control Chart Response were submitted. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in Lot ANFY. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for each sample in Lot ANFY. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field IDs and laboratory IDs for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QUALITY CONTROL

No samples from Lot ANFY were identified as field quality control samples.

#### IV. TECHNICAL ASSESSMENT

#### 1.0 Holding Times: ACCEPTABLE/All criteria met.

All soil samples in Lot ANFY were extracted within five days of collection and were analyzed within 26 days of extraction. The seven-day extraction holding time and 40-day analysis holding time limits were met.

#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

The appropriate number of calibration standards were used to generate a zero-intercept model standard curve for explosives compounds. Linearity was acceptable for the standard curves. Recalculation results of the regression statistics for the curves agreed with the laboratory values.

## 3.0 Daily Calibration: ACCEPTABLE/All criteria met.

The results of the daily calibration standard agreed with the initial calibration standard within 25%.

## 4.0 Blank Analysis: ACCEPTABLE/All criteria met.

One soil method blank was associated with the samples in Lot ANFY. Target explosives compounds were not detected in the method blank at or above the certified reporting limit (CRL).

## 5.0 Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/All criteria met.

The laboratory performed MS/MSD analyses with the samples from Lot ANFY.

# **6.0 High Spike and Low Spike Recovery:** ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

The DataChem QA Status Report noted that the recovery values for the following compounds were above the upper control limit in the high concentration spike analysis: 1,3,5-trintrobenzene, 2,4,6-trintrotoluene, and RDX. The 1,3,5-Trinitrotoluene recovery value was also high in the low concentration spike analysis. The QA Status Report that the USAEC Control Chart Response letter recommend that the data for Lot ANFY be accepted with no qualifiers. As the outliers were only slightly outside of the control limits, the data are not significantly affected, and no qualifiers were assigned.

## 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data for Lot ANFY were reviewed for explosives compounds; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

## 8.0 Compound Quantitation and Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

An evaluation of compound quantitation was performed by recalculating the sample results from the raw data. Discrepancies were not found. The CRL on the transfer file met those listed in the method. No transcription errors were noted.

## 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

## V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method.

An examination of the DataChem QA Status Report that includes Lot ANFY revealed the following items: several recovery values were greater than the upper control limit, and RDX control limits were miscalculated initially, but were corrected by the laboratory by hand in the control chart section. These items do not affect the data, and no action was taken.

All data, as reported, are acceptable for use.

# DATA QUALITY ASSESSMENT EXPLOSIVES ANALYSES: SOIL

METHOD: LW23 LOT: AMVC

## I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot AMVC were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed. DataChem QA Status Reports and USAEC Control Chart Response were submitted. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: Changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in Lot AMVC. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for each sample in Lot AMVC. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field IDs and laboratory IDs for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

## III. FIELD QUALITY CONTROL

No samples from Lot AMVC were identified as field quality control samples on the chain-of-custody forms.

#### IV. TECHNICAL ASSESSMENT

1.0 Holding Times: ACCEPTABLE/All criteria met.

All soil samples in Lot AMVC were extracted within five days of collection and were analyzed within 23 days of extraction. The seven-day extraction holding time and 40-day analysis holding time limits were met.

#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

The appropriate number of calibration standards were used to generate a zero-intercept model standard curve for explosives compounds. Linearity was acceptable for the standard curves. Recalculation results of the regression statistics for the curves agreed with the laboratory values.

## 3.0 Daily Calibration: ACCEPTABLE/All criteria met.

The results of the daily calibration standard agreed with the initial calibration standard within 25%.

## 4.0 Blank Analysis: ACCEPTABLE/All criteria met.

One soil method blank was associated with the samples in Lot AMVC. Target explosives compounds were not detected in the method blank at or above the certified reporting limit (CRL).

## 5.0 Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/All criteria met.

The laboratory used Sample ARP-94-57A for MS/MSD analyses with the samples from Lot AMVC. All percent recovery values were within control limits of 70% to 130%. All relative percent difference values were less than the maximum allowable value of 20%.

# **6.0 High Spike and Low Spike Recovery:** ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table AMVC-1.

#### Discussion:

In Lot AMVC the low concentration standard spike recovery values for 1,3,5-trinitrobenzene were significantly less than the lower control limit. The USAEC Chemistry Branch made the recommendation that all 1,3,5-trinitrobenzene results in Lot AMVC be rejected. All 1,3,5-trinitrobenzene detection limits for Lot AMVC were rejected (R).

## 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data for Lot AMVC were reviewed for explosives compounds; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

# 8.0 Compound Quantitation and Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

An evaluation of compound quantitation was performed by recalculating the sample results from the raw data. Discrepancies were not found. The CRL on the transfer file met those listed in the method. No transcription errors were noted.

## 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

#### V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method.

An examination of the DataChem QA Status Report that includes Lot AMVC revealed the following item: 1,3,5-trinitrobenzene results in the low spike were below the lower control limit.

All 1,3,5-trinitrobenzene results were rejected (R) due to low spike precision and accuracy deficiencies.

The data that are rejected (R) are unusable for any purpose. Other data, as reported, are acceptable for use.

## Qualified Data Summary Table Lot No: AMVC-1

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
1,3,5-trinitrobenzene	135TNB	R	ARP-94-57A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-57B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-57C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-58A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-58B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-58C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-59A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-59B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-59C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-60A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-60B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-60C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	OBP-94-01A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	OBP-94-01B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	OBP-94-01C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	OBP-94-01D	LT 9.22E-1	LS %R < LCL	6.0

**Environmental Science and Chemistry** 

## DATA QUALITY ASSESSMENT

# TEAD-N Remedial Investigation Phase II DAAA15-90-D-0007, Task Order 0003

## SWMU 6 Old Burn Area

## Prepared for:

RUST Environment and Infrastructure 743 Horizon Court, Suite 240 Grand Junction, Colorado 81506

## Prepared by:

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February 9, 1996

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## DATA QUALITY ASSESSMENT SUMMARY

## Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on the data for soil and water samples and associated laboratory quality control sample analyses.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Validation Level	Primary	Secondary
SWMU 6	Dioxin/Furan	AWHS	8290 (SOIL)	Tier 2	Shawna Kennedy	Eric Strout
•	Dioxin/Furan	AWDA	8290 (WATER)	Tier 1	Shawna Kennedy	Eric Strout
	Dioxin/Furan	AWKZ	8290 (SOIL)	Tier 1	Shawna Kennedy	Eric Strout
	Dioxin/Furan	AWHJ	8290 (WATER)	Tier 1	Shawna Kennedy	Eric Strout
	Explosives	AVRO	LW23 (SOIL)	Tier 1	Jason Ai	Jaime Bruton
	ICP Metals	AWBP	JS12 (SOIL)	Tier 2	Bob Olsiewski	Jason Ai
	Arsenic	AWBQ	B9 (SOIL)	Tier 2	Jason Ai	Bob Olsiewski
	Selenium	AWBR	JD20 (SOIL)	Tier 2	Jason Ai	Bob Olsiewski
	Thallium	AWBS	7841 (SOIL)	Tier 2	Jason Ai	Bob Olsiewski
	Antimony	<b>AWBT</b>	7041 (SOIL)	Tier 2	Jason Ai	Bob Olsiewski
	Mercury	AWBU	Y9 (SOIL)	Tier 2	Jason Ai	Bob Olsiewski

Data assessment was based on the QC criteria recommended in the above listed method; the Tooele Army Depot—North Area QC Plan; USEPA National Functional Guidelines for Organic and Inorganic Data Review (2/94); and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

A summary table of all qualified data for SWMU-6 is included as APPENDIX A. Each lot report also contains a summary table of qualified results. Data qualifiers are defined below. A numerical code has been added to each data qualifier to indicate the reason for the qualifier. A list of all of the reason codes is included as APPENDIX B. Data Quality Assessment Worksheets, Communication, and Corrective Action Records (if any) have been placed in labeled envelopes with the original data packages.



#### **DATA VALIDATION QUALIFIER DEFINITIONS**

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.
R	Unreliable result. Data should not be used. Analyte may or may not be present in the sample.
J	Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality Assessment Report should be consulted for reason.
UJ	Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report should be consulted for reason.

#### SITE DATA QUALITY SUMMARY

#### **ICP Metals**

One lot of ICP-metal analyses of soil samples using Method JS12 was reviewed. The precision and accuracy was acceptable, based on the percent recovery values for spiked analytes and the relative percent difference values for duplicate analyses. Matrix spike/matrix spike duplicate (MS/MSD) analyses were not submitted, although standard spikes (laboratory control samples) were analyzed. All chromium results in lot AWBP were estimated due to the high concentrations of iron present in the samples. Iron is an interferent for chromium during ICP analyses. No other qualifiers were issued to any of the soil samples.

#### **Arsenic**

One lot of arsenic analyses of soil samples using Method B9 was reviewed. The precision and accuracy were acceptable, based on the percent recovery values for spiked analytes and the relative percent difference values for duplicate analyses. Matrix spike/matrix spike duplicate (MS/MSD) analyses were not submitted, although standard spikes (laboratory control samples) were analyzed. Positive arsenic results were estimated in lot AWBQ due to high percent recovery values for the associated calibration verification (CCV). No other qualifiers were issued.

#### **Antimony**

One lot of antimony analyses of soil samples using USEPA Method 7041 was reviewed. The precision and accuracy was acceptable, based on the percent recovery values for the spiked analytes and the relative percent difference values for duplicate analyses. No qualifiers were issued.



#### Selenium

One lot of selenium analyses of soil samples using Method JD20 was reviewed. The precision and accuracy were acceptable, based on the percent recovery values for most spiked analytes and the relative percent difference values for duplicate analyses. Matrix spike/matrix spike duplicate (MS/MSD) analyses were not submitted, although standard spikes (laboratory control samples) were analyzed. No qualifiers were issued.

#### **Thallium**

Two lots of thallium analyses of soil samples using USEPA Method 7841 were reviewed. The precision and accuracy were acceptable for these lots, based on the percent recovery values for most spiked analytes and the relative percent difference values for duplicate analyses. All thallium detection limits were estimated (UJ) in lot AWBS due to low percent recovery values in the associated laboratory control sample analyses. No other qualifiers were issued.

#### Mercury

One lot of mercury analyses of soil samples using Method Y9 was reviewed. The precision and accuracy were acceptable for these lots, based on the percent recovery values for most spiked analytes and the relative percent difference values for duplicate analyses. Matrix spike/matrix spike duplicate (MS/MSD) analyses were not submitted, although standard spikes (laboratory control samples) were analyzed. All mercury detection limits were estimated in lot AWBU due to a negative blank concentration in the associated initial calibration blank (ICB). No other qualifiers were issued.

#### **Explosive Compounds**

One lot of analyses of explosive compounds in soil samples using Method LW23 was reviewed. The precision and accuracy were acceptable for these lots, based on the percent recovery values for most spiked analytes and the relative percent difference values for duplicate analyses. No qualifiers were issued to any of the soil samples.

#### **Dioxin/Furan Compounds**

Two lots of dioxin/furan analyses of soil samples using USEPA Method 8290 were reviewed. Accuracy and precision were acceptable, as demonstrated by the percent recovery values of the labeled compounds and spiked target analytes, and relative percent difference values from the MS/MSD and LCS/LCSD analyses. Most samples had at least one target compound qualified as not detected (U) due to contamination in the associated method blank. Two samples in lot AWKZ, and one sample in lot AWHS had compounds qualified due to low recoveries for the associated internal standards (labeled compounds). The compounds were estimated (J/UJ) due to the possible low bias for the reported value. No other qualifiers were issued to the soil samples.

Two lots of dioxin/furan analyses of water samples using USEPA Method \$290 were reviewed. Accuracy and precision were acceptable, as demonstrated by the percent recovery values of the



labeled compounds and spiked target analytes, and relative percent difference values from the MS/MSD and LCS/LCSD analyses. The water lots consisted of field blanks (equipment rinsate and field blanks) that were collected with the soil samples. Each field blank had low levels of at least one target compound. No action was taken, as it was not possible to directly associate a field blank to a given soil sample. No qualifiers were issued to any water sample.





# TIER II DATA QUALITY ASSESSMENT DIOXIN/FURAN ANALYSES: SOIL

METHOD: 8290 LOT: AWHS

## I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for this lot were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package. Results for the matrix spike/matrix spike duplicate (MS/MSD) analyses have been included although they are not required by USATHAMA 11-41 for Class 1A analyses. Transfer files were provided. DataChem QA Status Reports, USAEC Control Chart Response, and final sample results were not available at this time; however, these items may not be applicable to Method 8290 Dioxin/Furan analyses. Results for laboratory control sample (LCS) analyses were also submitted.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; correction fluid or tape was not found on any of the raw data; proper units for numerical values were used; the laboratory notebook pages and chromatograms were signed and dated by the analyst.

## II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete for this lot. All samples listed on the COCs were analyzed. All forms were signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, transfer files, laboratory notebooks, and the raw data. No discrepancies were found. The laboratory noted that Sample OBP-95-01A was received broken. This sample was canceled for dioxin analysis by the client. No action was taken.

#### III. FIELD QUALITY CONTROL

Data for one pair of field duplicates were submitted for review (Samples OBP-95-02C and OBP-95-01D). Relative percent difference (RPD) values were calculated for compounds detected in both replicates. Ten of the eleven calculated RPD values were greater than the QC limit of 50%. However, most of the reported concentrations were less than the method specified practical quantitation limit (PQL). A higher degree of variability is common at low concentrations. No data



were qualified based on field duplicate precision. Field variability should be considered in data interpretation. No data for samples identified as field blanks were submitted with this lot.

#### IV. TECHNICAL ASSESSMENT

## 1.0 Sample Holding Times: ACCEPTABLE/All criteria met.

The method required an extraction holding time of 30 days from the date of sampling to the date of extraction. All samples were extracted within 16 days of sampling. The method required an analytical holding time of 45 days from the date of extraction to the date of analysis. All samples were analyzed within 11 days of extraction.

## 2.0 HRMS Tuning: ACCEPTABLE/All criteria met.

Perfluorokerosene (PFK) instrument tuning compound static resolving power checks were analyzed before and after each analytical sequence. The resolution for each PFK was greater than 10,000 at 10% valley (versus peak height) as required by the method. PFK lock masses were verified, and were within 5 ppm of the method-specific m/z as required.

#### 3.0 Initial Calibration: ACCEPTABLE/All criteria met.

Initial calibrations were performed for the DB5 column. For initial calibrations, all native (unlabeled) dioxin/furan compounds (quantitated using isotope dilution) had percent relative standard deviation (%RSD) values that were within the 20% acceptance limit.

All other compounds (using the internal standard method) had %RSD values that were within the 30% acceptance limit. Ion abundance ratios, signal to noise (S/N) ratios, and relative response factor (RRF) values were verified by recalculation and are acceptable.

## 4.0 Calibration Verification: ACCEPTABLE/All criteria met.

The calibration verifications (CVER) were analyzed at the beginning and end of each sequence as required. The percent difference (%D) of the RRF values between the initial calibrations and CVER were within 20% and 30% for unlabeled and labeled compounds, respectively. Ion abundance ratios, signal to noise (S/N) ratios, and RRF values were verified by recalculation and are acceptable.

## 5.0 Isomer Specificity: ACCEPTABLE/All criteria met.

The retention time window mixture analysis for each congener (first and last eluting isomers) was submitted as required, and is acceptable. The isomer specificity test for TCDD (on the DB5 column) was submitted. The peak to valley ratio between 2378 TCDD and the closest eluting isomer was less than 25% as required by the method.

**6.0** Method Blank: ACCEPTABLE/With the following exception.

Qualified Data: See the DATA QUALIFIER SUMMARY TABLE.

#### Discussion:

The frequency requirement of one method blank for every 20 samples, or for every extraction batch of similar matrix, was met. One compound (1234678 HpCDF) was detected at a concentration less than the PQL in the method blank. An action level was established at five times the concentration in the blank. The 1234678 HpCDF results in the samples at concentrations less than the action level were qualified as not detected (U). No other compounds were detected in the method blank.

7.0 Labeled Compound Recovery: ACCEPTABLE/With the following exceptions.

Qualified Data: See the DATA QUALIFIER SUMMARY TABLE.

#### Discussion:

Two types of labeled compounds are used for the dioxin/furan analyses: recovery standards, which are used to calculate the recovery values of all labeled compounds and internal standards, which are used to quantitate the concentration of the native (target) compounds.

All labeled compounds met the ion abundance ratio and retention time criteria. All labeled compounds had percent recovery (%R) values within the method QC limits of 40% to 135% with the following exceptions. Sample OBP-95-01C had 13C-2378 TCDF (30.48%), 13C-2378 TCDD (29.38%), and 13C-12378 PeCDF (35.13%) %R values less than QC limits. Associated compound results (quantitated using the outlying internal standards) were qualified as estimated for this sample. There were no positive results associated with the internal standard outliers, so the associated detection limits were estimated (UJ).

8.0 Matrix Spike/Matrix Spike Duplicate Sample Analyses: ACCEPTABLE/All criteria met.

Matrix spike/matrix spike duplicate (MS/MSD) analyses data were submitted by the laboratory with Lot AWHS. MS/MSD analyses were performed using Sample OBP-95-04C. All %R values are within the QC limits of 50% to 150%, indicating acceptable accuracy. All RPD values were less than both the method QC limit of 20% and project QC limit of 50%, indicating an acceptable degree of precision.

9.0 Laboratory Control Sample Analysis: ACCEPTABLE/All criteria met.

One laboratory control sample (LCS) was extracted and analyzed by the laboratory with these samples. All %R values were within the QC limits of 50% to 150%.



## 10.0 Compound Identification: ACCEPTABLE/All criteria met.

Compound identifications for all reported compounds were reviewed and are acceptable. For native (unlabeled) target compounds and labeled standard compounds, all ion abundance ratio and retention time criteria were met. The correct m/z (as specified in the method) were used for each compound. All native and labeled compound S/N ratios met the required acceptance limits.

# 11.0 Compound Quantitation and Reported Detection Limits: ACCEPTABLE/With the following discussion.

Compound quantitations were reviewed by recalculation and were determined to be performed correctly. Transcription errors were noted for several samples. The laboratory was contacted, and corrected all of the errors. No further action was taken.

Detection limit calculations using the signal to noise (S/N) ratio method (for estimated detection limits) and the estimated maximum possible concentration (EMPC, when a non-target peak is present at the target compound elution time) method were reviewed and are acceptable. All detection limits and EMPC are less than method PQL, with the exception of one to six compounds in eight of the samples (refer to the Data Validation Worksheets for outliers). As the outlying detection limits were only slightly greater than the PQL, and as Method 8290 detection limits are sample and analysis specific, no action was taken.

#### V. OVERALL ASSESSMENT OF THE DATA

On the basis of this evaluation, the laboratory followed the specified analytical method.

Accuracy was found to be acceptable based on the labeled standard, MS/MSD, and LCS %R values. Precision was found to be acceptable based on the low RPD values of the MS/MSD set.

Data were qualified because of blank contamination, and due to labeled compound recovery outliers.

The data, as qualified, are acceptable for use.



# TIER 1 DATA QUALITY ASSESSMENT DIOXIN/FURAN ANALYSES: WATER

METHOD: 8290 LOT: AWDA

Analytical data for one water sample were reviewed using quality control (QC) criteria documented in the analytical method, *PAM 11-41* (USAEC, 1990), and *National Functional Guidelines* (U.S. EPA, 1991). The sample was collected on November 11, 1995 and was analyzed by Core Laboratories.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Tuning and Isomer Specificity Initial and Daily Calibration

- \* Blank Analyses
- Labeled Standards Recovery
   Laboratory Control Sample/Laboratory Control Sample Duplicate Analyses
   Compound Identification
   Reported Detection Limits

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## **Blank Analyses**

The frequency requirement of one method blank for every 20 samples, or for every extraction batch of similar matrix, was met. Three compounds (12378 PeCDF, 12378 PeCDD, and 123678 HxCDF) were detected in the method blank. These compounds were not detected in the associated samples. No action was taken.

The only sample submitted in this lot was equipment rinse 3ER-66 (collected 11/21/95). One compound (1234678 HpCDF) was detected in this sample at  $0.00000256~\mu g/L$ .

## **Labeled Standard Recovery**

Two types of labeled compounds are used for the dioxin/furan analyses: recovery standards, which are used to calculate the recovery values of all labeled compounds, and internal standards, which are used to quantitate the concentration of the native (target) compounds.

All labeled compounds met the ion abundance ratio and retention time criteria. All labeled compounds had percent recovery (%R) values within the method QC limits of 40% to 135% with

the exception of 13C-OCDD (136.74%) in the LCSD analysis. No action was taken for outliers in QC samples.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the LCS/LCSD set. Accuracy was acceptable, as demonstrated by the LCS/LCSD and most labeled standard %R values being within control limits.

All data, as reported, are acceptable for use.

CEIGINAL

## TIER 1 DATA QUALITY ASSESSMENT DIOXIN/FURAN ANALYSES: SOIL METHOD: 8290

LOT: AWKZ

Analytical data for 36 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, *PAM 11-41* (USAEC, 1990), and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 27 and 28, 1995, and were analyzed by Core Laboratories.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
Instrument Tuning and Isomer Specificity

- \* Initial and Daily Calibration
- \* Blank Analyses
- Labeled Standards Recovery
   Matrix Spike/Matrix Spike Duplicate Analyses
   Laboratory Control Sample/Laboratory Control Sample Duplicate Analyses
- \* Compound Identification
- Reported Detection Limits
- \* Field Duplicates

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## **Initial and Daily Calibration**

The calibration verifications (CVER) were analyzed at the beginning and end of each sequence as required. The percent difference (%D) of the relative response factor (RRF) values between the initial calibrations and CVER were within 20% and 30% (for unlabeled and labeled compounds, respectively) for the beginning CVER. However, several unlabeled compounds in the ending CVER had %D values greater than 20% (all outlying %D values were less than 25%). According to method 8290, if the CVER %D values are greater than 20% (but less than 25%), the laboratory should have quantitated the compounds associated with outlying %D values using the average of the RRF values from the beginning and ending CVER analyses. The laboratory used the initial calibration RRF values for all compound quantitations. As the %D values in the beginning CVER were acceptable, the associated data were judged not significantly affected, and no qualifiers were issued.

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## **Blank Analyses**

The frequency requirement of one method blank for every 20 samples, or for every extraction batch of similar matrix, was met. Several compounds were detected in the method blanks. Action levels were established at five times the concentrations in the blanks. Associated results in samples at concentrations less than the action levels were qualified as not detected (U).

## **Labeled Standard Recovery**

Two types of labeled compounds are used for the dioxin/furan analyses: recovery standards, which are used to calculate the recovery values of all labeled compounds and internal standards, which are used to quantitate the concentration of the native (target) compounds.

All labeled compounds met the ion abundance ratio and retention time criteria. All labeled compounds had percent recovery (%R) values within the method QC limits of 40% to 135%, with the exception of several labeled compounds in Samples OBS-95-08 and OBS-95-27 (all outliers were less than 40%). Associated compound results (quantitated using the outlying internal standards) were qualified as estimated (J/UJ) for these samples because of the possible low bias.

## **Compound Identification**

The method specifies that 2378 TCDF should be reported from analysis on a DB-225 column. The laboratory did not analyze samples for 2378 TCDF on a DB-225 column. No action was taken.

## **Reported Detection Limits**

All detection limits and EMPC are less than method PQL values, with the exception of one to five compounds in six of the samples (refer to the Data Validation Worksheets for outliers). As the outlying detection limits were only slightly greater than the PQL values, and as Method 8290 detection limits are sample and analysis specific, no action was taken.

## **Field Duplicates**

Data for three pairs of field duplicates were submitted for review. Relative percent difference (RPD) values were calculated for compounds detected in both replicates. All compound RPD values were less than 50% except for OCDD and OCDF in Samples OBS-95-10 and OBS-95-10FD (at 82.9% and 117.7%). No data were qualified based on field duplicate precision. Field variability should be considered in data interpretation.



#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method with two minor exceptions. The laboratory used the average response factors from the initial calibration during compound quantitation, and the laboratory did not perform DB-225 column analysis for the tetrafuran results. These deviations should have no significant impact on the reported results, and no action was taken.

Precision was acceptable, as demonstrated by the RPD values of the MS/MSD set. Accuracy was acceptable, as demonstrated by the MS/MSD, LCS, and most labeled standard %R values being within control limits.

Data were qualified because of blank contamination and labeled standard recovery outliers.

All data, as qualified, are acceptable for use.





## TIER 1 DATA QUALITY ASSESSMENT DIOXIN/FURAN ANALYSES: WATER METHOD: 8290

LOT: AWHJ

Analytical data for three water samples were reviewed using quality control (QC) criteria documented in the analytical method, *PAM 11-41* (USAEC, 1990), and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 27 and 28, 1995, and were analyzed by Core Laboratories.

## **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
Instrument Tuning and Isomer Specificity

- Initial and Daily Calibration
- \* Blank Analyses
   Labeled Standards Recovery
   Laboratory Control Sample/Laboratory Control Sample Duplicate Analyses
   Compound Identification
   Reported Detection Limits

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## **Initial and Daily Calibration**

The calibration verifications (CVER) were analyzed at the beginning and end of each sequence as required. The percent difference (%D) of the relative response factor (RRF) values between the initial calibrations and CVER were within 20% and 30% for unlabeled and labeled compounds, respectively, with the following exceptions.

The OCDF %D value for the 12/20/95 ending CVER was greater than 20% but less than 25% (at -24%). The 123478 HxCDD %D value for the 12/21/95 ending CVER was greater than 20% but less than 25% (at 22%). According to method 8290, the laboratory should have quantitated OCDF and 123478 HxCDD results using the average of the RRF values from the beginning and ending CVER analyses. The laboratory used the initial calibration RRF values for all compound quantitations. As the %D values in the beginning CVER were acceptable, the associated data were judged not significantly affected, and no qualifiers were issued.



## **Blank Analyses**

The frequency requirement of one method blank for every 20 samples, or for every extraction batch of similar matrix, was met. No compounds were detected in the method blank.

The only samples submitted in this lot were two equipment rinses and a field blank. Sample 3ER-68 (collected 11/28/95) contained 1234678 HpCDF at 0.00000159  $\mu$ g/L. Sample 3ER-69 (collected 11/29/95) contained OCDD at 0.00000933  $\mu$ g/L. Sample 3FB-P (collected 11/29/95) contained 1234678 HpCDD at 0.00000255  $\mu$ g/L, and OCDD at 0.00000430  $\mu$ g/L.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the LCS/LCSD set. Accuracy was acceptable, as demonstrated by the LCS/LCSD and labeled standard %R values being within control limits.

All data, as reported, are acceptable for use.

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## TIER I DATA QUALITY ASSESSMENT EXPLOSIVES ANALYSES: SOIL METHOD: LW23

LOT: AVRO

Analytical data for 25 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The samples were collected from November 29 through 30, 1995, and were analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration Daily Calibration Blank Analyses

- \* Laboratory Control Sample Analyses
- \* Field Duplicate Analyses
- \* Matrix Spike/Matrix Spike Duplicate Analyses
- \* Compound Identification Chromatogram Quality

Compound Quantitation and Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## **Laboratory Control Sample Analyses**

Laboratory control sample (LCS) analyses were performed at the required frequency. Most percent recovery (%R) and relative percent difference (RPD) values were within control limits. The %R and RPD value outliers are listed in the Data Quality Assessment Worksheets. In the professional judgment of the reviewer, no qualification of the sample results on the basis of the %R values in the LCS analyses was necessary.

## **Field Duplicate Analyses**

Two field duplicate sets (OBS-95-34/OBS-95-34FD and ARS-95-10/ARS-95-10FD) were analyzed by the laboratory. No positive results were reported in Samples OBS-95-34 or OBS-95-34FD; field duplicate RPD values were not calculable. Positive results for RDX were reported in Samples ARS-95-10 and ARS-95-10FD at concentrations (corrected for moisture) of  $5.34~\mu g/g$  and  $40.9~\mu g/g$ , respectively. The RPD value of RDX was 153.9%, which was greater than

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the 50% control limit. Positive results for HMX and tetryl were reported for Sample ARS-95-10FD, but not for ARS-95-10. No qualifiers were assigned based on field duplicate results.

## Matrix Spike/Matrix Spike Duplicate Analyses

Sample ARS-95-10FD was selected for matrix spike/matrix spike duplicate (MS/MSD) analyses. All %R values were within control limits, except for 2,4-dinitrotoluene. The %R values of 2,4-dinitrotoluene in the MS/MSD analyses were greater than the 28% to 89% control limits at 94% and 98%, respectively. In the professional judgment of the reviewer, no qualification of the sample results on the basis of 2,4-dinitrotoluene %R value was necessary. All RPD values were within control limits.

## **Compound Identification**

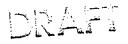
Several positive results were C-flagged by the laboratory to indicate that the results were confirmed by a second column. A result for RDX in Sample ARS-95-05 was Q-flagged by the laboratory to denote that the compound was not confirmed on the second column because of matrix interference. No action was taken on this basis.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the RPD values of the MS/MSD and the LCS analyses being within control limits. Accuracy was acceptable, as demonstrated by the LCS and MS/MSD %R values being within control limits, except where previously noted.

All data, as reported, are acceptable for use.





## TIER II DATA QUALITY ASSESSMENT METALS-ICP ANALYSES: SOIL METHOD: JS12

LOT: AWBP

## I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for this lot were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and, all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

## II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete for this lot. All samples listed on the COCs were analyzed. All forms were signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples and all forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

## III. FIELD QUALITY CONTROL

The data for one set of field duplicate samples (OBS-95-34/OBS-95-34FD) were submitted for review. The relative percent difference (RPD) values ranged from 0.0% to 17.4%.

No field blanks were submitted with the samples of this lot.

## IV. TECHNICAL ASSESSMENT

1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method-specific holding time of 180 days from the date of collection to the date of analysis.

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#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

Instrument calibration consisted of one blank and one standard. Instrument sensitivity could not be evaluated with the documentation provided. All calibration check standards were within ±10% of the true value.

The laboratory analyzed a continuing calibration verification (CCV) standard every 10 samples, as required. The percent recovery (%R) value of the CCV was within ±10% of the true value.

#### 3.0 Blank Analyses: ACCEPTABLE/With the following discussion.

The data for initial and continuing calibration blanks (ICB, CCB), preparation blanks (PB), and QC blanks were evaluated for possible contamination effects. Calibration blank data were also evaluated for causing possible low bias in the associated samples. The laboratory analyzed CCBs after each CCV as required. A preparation blank was prepared with each digestion batch as required. No CCB result was greater than the reporting limit or less than the negative reporting limit, and no PB result was greater than the reporting limit.

Aluminum, barium, calcium, iron, potassium, magnesium, manganese, vanadium, and zinc were detected in one QC blank (BL-104889-1). Since this soil blank sample (from RMA soil, R3D-425) was unwashed soil, no qualifications of associated sample data were recommended.

#### 4.0 Matrix Spike/Matrix Spike Duplicate Analyses: NOT SUBMITTED.

No matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on samples in this Lot. No action was taken on this basis.

#### 5.0 High Spike and Low Spike Analyses: ACCEPTABLE/With the following discussion.

One low spike and two high spike analyses were performed with this sample lot. Spike %R values were evaluated based on the control chart upper and lower limits. The %R values of the low spike and high spike analyses were within the control limits, with the exception of those listed in the table below.

Analyte	Low Spike	Control Limit	1st High Spike	2nd High Spike	Control Limits
Nickel	93.4%	97.0% to 127.2%	Acceptable	Acceptable	95.5% to 101.1%
Vanadium	Acceptable	70.7% to 122.5%	103.7%	Acceptable	95.1% to 101.5%
Copper	Acceptable	109.2% to 121.4%	Acceptable	108.0%	96.0% to 101.2%
Lead	Acceptable	96.1% to 117.9%	Acceptable	97.3%	98.5% to 103.3%

As all of the above %R values were within the National Functional Guidelines control limits and no qualifiers were assigned.



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## 6.0 Duplicate Sample Analyses: ACCEPTABLE/With the following discussion.

Laboratory duplicate analyses were not performed with this sample lot; however, the relative percent difference (RPD) values between the two high spike laboratory control samples were evaluated. The copper RPD value of 8.3% was above the control limit of 4.6%; as this value is within the *National Functional Guidelines* control limits, no qualifiers were assigned. All RPD values were acceptable.

7.0 ICP Interference Check Sample Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See the DATA QUALIFIER SUMMARY TABLE

Discussion:

The laboratory analyzed an ICP interference check sample (ICS) immediately following initial calibration and at the end of the analytical run. The laboratory used the initial calibration standard number 3 as the ICS. This standard contains aluminum, calcium, iron, magnesium, potassium and sodium at 500 mg/L, which is equivalent to the EPA solution ICSA. Standard number 3 %R values were within the Functional Guidelines criteria of 80% to 120% for each of these added metals. Additionally, all unspiked analytes were less than the absolute value of the reporting limit, except for chromium and zinc. The chromium results were judged to be affected by the concentration of iron (an interferent) present in the samples; the chromium results were qualified as estimated (J-21). The zinc results were judged to be unaffected.

8.0 ICP Serial Dilution Analyses: ACCEPTABLE/With the following discussion.

The laboratory analyzed Sample OBS-95-39 at a ten fold dilution rather at a five fold dilution. These original and diluted sample results are equivalent to the ICP serial dilution analyses, and therefore can be used to determine if interference is indicated. All serial dilution results were acceptable.

9.0 Certified Reporting Limits: ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits matched the certified reporting limit listed in the laboratory SOP.

10.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.



## V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No MS/MSD analyses were performed; therefore, no sample-specific accuracy evaluation was possible for this Lot. Accuracy, as measured by the %R values of the low/high spike analyses, was acceptable, except where noted. Precision, as measured by the RPD between laboratory control sample and field duplicates, was acceptable.

Qualification of chromium results was required because of high iron concentrations (an interferent for chromium) presented in the samples.

The data, as qualified, are acceptable for use.



## TIER II DATA QUALITY ASSESSMENT ARSENIC ANALYSES: SOIL METHOD: B9

LOT: AWBQ

#### I. **DELIVERABLES AND DOCUMENTATION**

All necessary documentation for this lot were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package. In the raw data, sample concentrations were converted incorrectly from µg/L to µg/g. However, since sample concentrations were reported correctly in the transfer files, no action was taken.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and, all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete for this lot. All samples listed were analyzed and all forms were signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QUALITY CONTROL

The data for one set of field duplicate samples (OBS-95-34/OBS-95-34FD) were submitted for review. Arsenic was detected in these two samples at concentrations of 7.29 µg/g and 6.33 µg/g, respectively. The relative percent difference (RPD) value was 14.0%, which was less than the maximum control limit of 50%. The field precision was acceptable. No field blanks were submitted with the samples of this lot.

#### IV. **TECHNICAL ASSESSMENT**

1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method-specific holding time of 180 days from the date of collection to the date of analysis.

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2.0 Instrument Calibration: ACCEPTABLE/With the following exceptions.

Qualified Data: See the DATA QUALIFIER SUMMARY TABLE

Discussion:

Instrument calibration consisted of one blank and seven standards. The correlation coefficient was greater than the method requirement of 0.995. All initial calibration verification (ICV) standards were within  $\pm 10\%$  of the true value.

The laboratory analyzed a continuing calibration verification (CCV) standard every 10 samples, as required. The percent recovery (%R) values of two CCV analyzed on 1/4/96 were greater than the upper control limit of 110% at 111.8%. Positive arsenic results associated with these two CCV were qualified as estimated (J-5B).

## 3.0 Blank Analyses: ACCEPTABLE/All criteria met.

The data for initial and continuing calibration blanks (ICB, CCB), preparation blanks (PB), and QC blanks were evaluated for possible contamination effects. Calibration blank data were also evaluated for causing possible low bias in the associated samples. The laboratory analyzed CCBs after each CCV as required. A preparation blank was prepared with each digestion batch as required. Arsenic was not detected in any of the blanks at concentrations greater than or equal to the reporting limit.

## 4.0 Matrix Spike/Matrix Spike Duplicate Analyses: NOT PERFORMED.

No matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on samples in this lot. No action was taken on this basis.

## 5.0 High Spike and Low Spike Analyses: ACCEPTABLE/With the following discussion.

One low spike and two high spike analyses were performed with this sample lot. The low/high spike %R values were evaluated based on the control chart upper and lower limits. The low spike %R value of 122% was greater than the upper control limit of 110.4%; as this spike %R value was within the *National Functional Guidelines* control limits, no qualifiers were assigned. The high spike %R values of 97.2% and 105.6% were within the control limits.

## 6.0 Duplicate Sample Analyses: NOT PERFORMED.

Laboratory duplicate analyses were not performed with this sample lot; however, the RPD values between the two high spike samples were evaluated. The arsenic RPD value of 8.3% was less than the maximum control limit of 17.3%. The laboratory precision was acceptable.

## 7.0 Certified Reporting Limits: ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits matched the certified reporting limit listed in the laboratory SOP.

## 8.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

## V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method.

Accuracy, as measured by the %R values of the low/high spike analyses, was acceptable. Precision, as measured by the RPD values of high spike analyses, was acceptable.

Qualification of sample results was required because of high CCV %R values.

The data, as qualified, are acceptable for use.

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## TIER II DATA QUALITY ASSESSMENT SELENIUM ANALYSES: SOIL METHOD: JD20

LOT: AWBR

## I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for this lot were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and, all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

## II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete and all samples listed were analyzed. All forms were signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples and all forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QUALITY CONTROL

The data for one set of field duplicate samples (OBS-95-34/OBS-95-34FD) were submitted by the laboratory for review. Selenium was not detected in these two samples; therefore, the relative percent difference (RPD) value was not calculable. The field precision was acceptable.

No field blanks were submitted with the samples of this lot.

## IV. TECHNICAL ASSESSMENT

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1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method-specific holding time of 180 days from the date of collection to the date of analysis.

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#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

Instrument calibration consisted of one blank and six standards. The correlation coefficient was greater than the method requirement of 0.995. All initial calibration verification (ICV) standards were within  $\pm 10\%$  of the true value.

The laboratory analyzed a continuing calibration verification (CCV) standard every 10 samples, as required. The percent recovery (%R) value of the CCV was within  $\pm 10\%$  of the true value.

## 3.0 Blank Analyses: ACCEPTABLE/All criteria met.

The data for initial and continuing calibration blanks (ICB, CCB), preparation blanks (PB), and QC blanks were evaluated for possible contamination effects. Calibration blank data were also evaluated for causing possible low bias in the associated samples. The laboratory analyzed CCBs after each CCV as required. A preparation blank was prepared with each digestion batch, as required. Selenium was not detected in any of the blanks at concentrations greater than or equal to the reporting limit.

## 4.0 Matrix Spike/Matrix Spike Duplicate Analyses: NOT PERFORMED.

No matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on samples in this lot. No action was taken on this basis.

# 5.0 High Spike and Low Spike Analyses: ACCEPTABLE/With the following discussion.

One low spike and two high spike analyses were performed with this sample lot. The low/high spike %R values were evaluated based on the control chart upper and lower limits. The first high spike %R value of 111.9% was greater than the upper control limit of 104.8%. As this high spike %R value was within the *National Functional Guidelines* control limits, no qualifiers were assigned. The low spike %R value of 104.6% and second high spike %R value of 100% were within the control limits.

## **6.0 Duplicate Sample Analyses:** NOT PERFORMED.

Laboratory duplicate analyses were not performed with this sample lot; however, the RPD values between the two high spike samples were evaluated. The selenium RPD value of 11.2% was less than the maximum control limit of 23.8%. The laboratory precision was acceptable.

## 7.0 Graphite Furnace QC Analyses: NOT PERFORMED.



## 8.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits matched the certified reporting limits listed in the laboratory SOP.

## 9.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

## V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method.

Accuracy, as measured by the %R values of the low/high spike analyses, was acceptable, except where noted. Precision, as measured by the RPD values of high spike analyses, was acceptable.

The data, as reported, are acceptable for use.

## TIER II DATA QUALITY ASSESSMENT THALLIUM ANALYSES: SOIL METHOD: SW-7841

LOT: AWBS

#### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for this lot were provided by the laboratory to meet project requirements for this data package.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and, all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

## II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete for this lot and all samples listed were analyzed. All COCs were signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QUALITY CONTROL

The data for one set of field duplicate samples (OBS-95-34/OBS-95-34FD) were submitted for review. Thallium was not detected in these two samples; therefore, the relative percent difference (RPD) value was not calculable. The field precision was acceptable.

No field blanks were submitted with the samples of this lot.

#### IV. TECHNICAL ASSESSMENT

1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method-specific holding time of 180 days from the date of collection to the date of analysis.

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#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

Instrument calibration consisted of one blank and four standards. The correlation coefficient was greater than the method requirement of 0.995. All initial calibration verification (ICV) standards were within  $\pm 10\%$  of the true value.

The laboratory analyzed a continuing calibration verification (CCV) standard every 10 samples, as required. The percent recovery (%R) value of the CCV was within  $\pm 10\%$  of the true value.

## 3.0 Blank Analyses: ACCEPTABLE/All criteria met.

The data for initial and continuing calibration blanks (ICB, CCB), preparation blanks (PB), and QC blanks were evaluated for possible contamination effects. Calibration blank data were also evaluated for causing possible low bias in the associated samples. The laboratory analyzed CCBs after each CCV as required. A preparation blank was prepared with each digestion batch as required. Thallium was not detected in any of the blanks at concentrations greater than or equal to the reporting limit.

## 4.0 Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/All criteria met.

Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed by the laboratory on Sample OBS-95-29. The %R values of 93.2% and 89.0% and RPD value of 4.4% were within the control limits of 75% to 125% for accuracy and 35% for precision.

# **5.0** Laboratory Control Sample Analyses: ACCEPTABLE/With the following exception.

Qualified Data: See the DATA QUALIFIER SUMMARY TABLE

#### Discussion:

One laboratory control sample (LCS) analysis was performed with this sample lot. The %R value of 65.7% was less than the lower control limit of 80%. Thallium results in this lot were qualified as estimated (UJ-10).

## 6.0 Duplicate Sample Analyses: ACCEPTABLE/All criteria met.

Laboratory duplicate analyses were performed on Sample OBS-95-29. Thallium was not detected in the original and duplicate samples; therefore, the RPD value was not calculable. The laboratory precision was acceptable.

# 7.0 Graphite Furnace QC Analyses: ACCEPTABLE/All criteria met.

The laboratory performed a post-digestion spike analysis on Sample OBS-95-39. The %R value of 104.6% was within the control limits of 85% to 115%.

# 8.0 Certified Reporting Limits: ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits matched the certified reporting limit listed in the laboratory SOP.

# 9.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

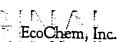
# V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method.

Accuracy, as measured by the %R values of the MS/MSD and LCS analytes, was acceptable, except where noted. Precision, as measured by the RPD values of MS/MSD, laboratory duplicate and field duplicates, was acceptable.

Qualification of sample results was required because of a low LCS %R value.

The data, as qualified, are acceptable for use.



# TIER II DATA QUALITY ASSESSMENT ANTIMONY ANALYSES: SOIL METHOD: SW-7041

LOT: AWBT

# I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for this lot were provided by the laboratory to meet project requirements for this data package.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and, all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

# II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete for this lot and all samples listed were analyzed. All forms were signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples and all were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

# III. FIELD QUALITY CONTROL

The data for one set of field duplicate samples (OBS-95-34/OBS-95-34FD) were submitted by the laboratory for review. Antimony was not detected in these two samples; therefore, the relative percent difference (RPD) value was not calculable. The field precision was acceptable.

No field blanks were submitted with the samples of this lot.

# IV. TECHNICAL ASSESSMENT

# 1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method-specific holding time of 180 days from the date of collection to the date of analysis.

RUST E&I: Tooele North Data Assessment KK 02/07/96 7:45 AM L:089-RUSTYTOOELE/C08909.020/TIERZAWBT\_T2.58

# 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

Instrument calibration consisted of one blank and five standards. The correlation coefficient was greater than the method requirement of 0.995. All initial calibration verification (ICV) standards were within  $\pm 10\%$  of the true value.

The laboratory analyzed a continuing calibration verification (CCV) standard every 10 samples, as required. The percent recovery (%R) value of the CCV was within  $\pm 10\%$  of the true value.

# 3.0 Blank Analyses: ACCEPTABLE/All criteria met.

The data for initial and continuing calibration blanks (ICB, CCB), preparation blanks (PB), and QC blanks were evaluated for possible contamination effects. Calibration blank data were also evaluated for causing possible low bias in the associated samples. The laboratory analyzed CCBs after each CCV as required. A preparation blank was prepared with each digestion batch as required. Antimony was not detected in any of the blanks at concentrations greater than or equal to the reporting limit.

# **4.0** Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/With the following discussion.

Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on Sample OBS-95-29. The MS percent recovery (%R) value of 73.3% was slightly less than the lower control limit of 75%. Since the MSD %R value of 85.2% and RPD value of 11.5% were within the control limits of 75% to 125% for accuracy and 35% for precision, no qualifiers were assigned.

# 5.0 Laboratory control Sample Analyses: ACCEPTABLE/All criteria met.

One laboratory control sample (LCS) analysis was performed with this sample lot. The %R value of 111.3% was within the control limits of 80% to 120%.

# 6.0 Duplicate Sample Analyses: ACCEPTABLE/All criteria met.

Laboratory duplicate analyses were performed on Sample OBS-95-29. Antimony was detected in the original and duplicate samples at concentrations of 1.25  $\mu$ g/g and 1.26  $\mu$ g/g, respectively. The RPD value of 0.8% was less than the maximum control limit of 35%. The laboratory precision was acceptable.

# 7.0 Graphite Furnace QC Analyses: ACCEPTABLE/All criteria met.

The laboratory performed a post-digestion spike analysis on Sample OBS-95-31. The %R value of 101.3% was within the control limit of 85% to 115%.



# 8.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits matched the certified reporting limit listed in the laboratory SOP.

# 9.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

# V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method.

Accuracy, as measured by the %R values of the MS/MSD and LCS analytes, was acceptable, except where noted. Precision, as measured by the RPD values of MS/MSD, laboratory duplicate and field duplicates, was acceptable.

The data, as reported, are acceptable for use.

# TIER II DATA QUALITY ASSESSMENT **MERCURY ANALYSES: SOIL** METHOD: Y9

LOT: AWBU

### **DELIVERABLES AND DOCUMENTATION** I.

All necessary documentation for this lot were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and, all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete for this lot, and all samples listed were analyzed. All COCs were signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

### III. FIELD QUALITY CONTROL

The data for one set of field duplicate samples (OBS-95-34/OBS-95-34FD) were submitted for review. Mercury was not detected in these two samples; therefore, the relative percent difference (RPD) value was not calculable. The field precision was acceptable.

No field blanks were submitted with the samples of this lot.

### IV. **TECHNICAL ASSESSMENT**

1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method-specific holding time of 28 days from the date of collection to the date of analysis.



# 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

Instrument calibration consisted of one blank and five standards. The correlation coefficient was greater than the method requirement of 0.995. All initial calibration verification (ICV) standards were within  $\pm 10\%$  of the true value.

The laboratory analyzed a continuing calibration verification (CCV) standard every 10 samples, as required. The percent recovery (%R) value of the CCV was within ±10% of the true value.

# 3.0 Blank Analyses: ACCEPTABLE/With the following exception.

Qualified Data: See the DATA QUALIFIER SUMMARY TABLE

# Discussion:

The data for initial and continuing calibration blanks (ICB, CCB), preparation blanks (PB), and QC blanks were evaluated for possible contamination effects. Calibration blank data were also evaluated for causing possible low bias in the associated samples. The laboratory analyzed CCBs after each CCV as required. A preparation blank was prepared with each digestion batch as required.

Negative blank concentration was detected in the ICB at -0.053  $\mu$ g/g. Mercury was not detected in any samples at concentrations greater than or equal to the reporting limits; all associated mercury results were qualified as estimated (UJ-7). Mercury was detected in other blanks at concentrations greater than or equal to the reporting limit.

# 4.0 Matrix Spike/Matrix Spike Duplicate Analyses: NOT PERFORMED.

The laboratory did not perform matrix spike/matrix spike duplicate (MS/MSD) analyses on samples in this lot. No action was taken on this basis.

# 5.0 High Spike and Low Spike Analyses: ACCEPTABLE/All criteria met.

One low spike and two high spike analyses were performed with this sample lot. The low/high spike %R values were evaluated based on the control chart upper and lower limits. The low spike %R value of 114% and high spike %R values of 111.2% and 111.0% were within the control limits.

# 6.0 Duplicate Sample Analyses: NOT PERFORMED.

Laboratory duplicate analyses were not performed with this sample lot; however, the RPD values between the two high spike samples were evaluated. The mercury RPD value of 0.2% was less than the maximum control limit of 17.6%. The laboratory precision was acceptable.

RUST E&I: Tooele North Data Assessment KK 02/07/86 7:44 AM L:089-RUST\TOOELE\C08909.020\TIERZAWBU\_TZ.HG

AWBU-2

EcoChem, Inc.

# 7.0 Certified Reporting Limits: ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits matched the certified reporting limit listed in the laboratory SOP.

# 8.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

# V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method.

Accuracy, as measured by the %R values of the low/high spike analyses, was acceptable. Precision, as measured by the RPD values of high spike analyses, was acceptable.

Qualification of sample results was required because of a negative blank concentration in the ICB.

The data, as qualified, are acceptable for use.

8909-10

	8909-10	)								
)	Lot	20015		Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
	AWKZ	OBP-95-01A	038 UC04344	SOIL	8290	78HXDF	0.0000603	В	U-7	UGG
	AWHS	OBP-95-01C	003 UC04172	SOIL	8290	234PCF	LT 0.000000980		UJ-19	UGG
ĺ	AWHS	OBP-95-01C 003 UC04172		SOIL	8290	78PCDF	LT 0.000000900		UJ-19	UGG
[	AWHS	OBP-95-01C	P-95-01C 003 UC04172		8290	TCDD	LT 0.00000131		UJ-19	UGG
	AWHS	OBP-95-01C	003 UC04172	SOIL	8290	TCDF	LT 0.00000133		UJ-19	UGG
	AWHS	OBP-95-01D	007 UC04176	SOIL	8290	678HPF	0.00000131	DJP	U-7	UGG
	AWHS	OBP-95-02A	004 UC04173	SOIL	8290	678HPF	0.00000210	JP	U-7	UGG
ſ	AWHS	OBP-95-03C	010 UC04179	SOIL	8290	678HPF	0.00000239	<del> </del>	U-7	UGG
	AWKZ	OBS-95-01	003 UC04261	SOIL	8290	678HPF	0.00000325		U-7	UGG
	AWKZ	OBS-95-01	003 UC04261	SOIL	8290	OCDD	0.00000944		U-7	UGG
	AWKZ	OBS-95-02	004 UC04262	SOIL	8290	678HPF	0.00000679		U-7	UGG
	AWKZ	OBS-95-02	004 UC04262	SOIL	8290	789HPF	0.00000118	JPB	U-7	UGG
	AWKZ	OBS-95-02	004 UC04262	SOIL	8290	78HXDF	0.00000228	JPB	U-7	UGG
Ī	AWKZ	OBS-95-02	004 UC04262	SOIL	8290	OCDD	0.0000195	В	U-7	UGG
	AWKZ	OBS-95-03	005 UC04263	SOIL	8290	678HPD	0.00000346		U-7	UGG
Ī	AWKZ	OBS-95-03	005 UC04263	SOIL	8290	678HPF	0.0000587		U-7	UGG
ſ	AWKZ	OBS-95-03	005 UC04263	SOIL	8290	OCDD	0.0000266		U-7	UGG
١ſ	AWKZ	OBS-95-04	006 UC04264	SOIL	8290	678HPD	0.00000311		U-7	UGG
1	AWKZ	OBS-95-04	006 UC04264	SOIL	8290	678HPF	0.00000226		U-7	UGG
	AWKZ	OBS-95-04	006 UC04264	SOIL	8290	78HXDF	0.00000837	JPB	U-7	UGG
	AWKZ	OBS-95-04	006 UC04264	SOIL	8290	OCDD	0.0000280		U-7	UGG
Ī	AWKZ	OBS-95-05	009 UC04265	SOIL	8290	678HPF		JPB	U-7	UGG
	AWKZ	OBS-95-05	009 UC04265	SOIL	8290	TCDF	0.000000174	JPB	U-7	UGG
	AWKZ	OBS-95-06	010 UC04266	SOIL	8290	678HPF	0.000000952	JPB	U-7	UGG
	AWKZ	OBS-95-06	010 UC04266	SOIL	8290	OCDD		JPB	U-7	UGG
	AWKZ	OBS-95-06	010 UC04266	SOIL	8290	OCDF	0.00000299			UGG
[	AWKZ	OBS-95-06	010 UC04266	SOIL	8290	TCDF	0.000000127		U-7	UGG
Ţ,	AWKZ	OBS-95-07	011 UC04267	SOIL	8290	678HPF	0.00000288			UGG
[	AWKZ	OBS-95-07	011 UC04267	SOIL	8290	678HXF	0.000000268		U-7	UGG
	AWKZ	OBS-95-08	012 UC04268	SOIL	8290	678HPF	0.000000997			UGG
	AWKZ	OBS-95-08	012 UC04268	SOIL	8290	OCDD	0.0000339			UGG
7	AWKZ	OBS-95-08	012 UC04268	SOIL .	8290	OCDF	0.00000239			UGG
7	AWKZ	OBS-95-08	012 UC04268	SOIL	8290	TCDD	LT 0.000000410			UGG
7	AWKZ	OBS-95-08	012 UC04268	SOIL	8290	TCDF	0.000000206			UGG
7	AWKZ	OBS-95-09	013 UC04269	SOIL	8290	234HXF	0.000000209			UGG
	AWKZ	OBS-95-09	013 UC04269	SOIL	8290	678HPF	0.00000158			UGG
1	AWKZ	OBS-95-09	013 UC04269	SOIL	8290	678HXF	0.00000154			UGG
7	AWKZ	OBS-95-09	013 UC04269	SOIL	8290	OCDD	0.00000622			UGG
[	AWKZ	OBS-95-09	013 UC04269	SOIL	8290	OCDF	0.00000363			UGG
				-					18 8	
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EcoChem, Inc.

Lot	Site ID			Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AWKZ	OBS-95-10	014 UC04270	SOIL	8290	OCDD	0.00000688	В	U-7	UGG
AWKZ	OBS-95-10	014 UC04270	SOIL	8290	OCDF	0.00000428	JPB	U-7	UGG
AWKZ	OBS-95-10	014 UC04270	SOIL	8290	TCDF	0.00000169	JPB	U-7	UGG
AWKZ	OBS-95-11	015 UC04271	SOIL	8290	234HXF	0.000000276	JPB	U-7	UGG
AWKZ	OBS-95-11	015 UC04271	SOIL	8290	678HPF	0.00000241	JPB	U-7	UGG
AWKZ	OBS-95-11	015 UC04271	SOIL	8290	OCDD	0.00000789	В	U-7	UGG
AWKZ	OBS-95-11	015 UC04271	SOIL	8290	OCDF	0.00000582	В	U-7	UGG
AWKZ	OBS-95-11	015 UC04271	SOIL	8290	TCDF	0.000000233	JPB	U-7	UGG
AWKZ	OBS-95-12	017 UC04273	SOIL	8290	678HPF	0.0000546	В	U-7	UGG
AWKZ	OBS-95-12	017 UC04273	SOIL	8290	678HXF	0.00000301	JPB	U-7	UGG
AWKZ	OBS-95-12	017 UC04273	SOIL	8290	TCDF	0.00000279	JPB	U-7	UGG
AWKZ	OBS-95-13	018 UC04274	SOIL	8290	234HXF	0.00000616	JPB	U-7	UGG
AWKZ	OBS-95-13	018 UC04274	SOIL	8290	678HXF	0.000000573	JPB	U-7	UGG
AWKZ	OBS-95-15	020 UC04276	SOIL	8290	678HPF	0.00000121	JPB	U-7	UGG
AWKZ	OBS-95-15	020 UC04276	SOIL	8290	OCDF	0.00000305	JPB	U-7	UGG
AWKZ	OBS-95-15	020 UC04276	SOIL	8290	TCDF	0.000000171	JPB	U-7	UGG
AWKZ	OBS-95-16	021 UC04277	SOIL	8290	678HPF	0.00000289	В	U-7	UGG
AWKZ	OBS-95-16	021 UC04277	SOIL	8290	OCDF	0.00000582	В	U-7	UGG
AWKZ	OBS-95-16	021 UC04277	SOIL	8290	TCDF	0.000000346	JPB	U-7	UGG
AWKZ	OBS-95-18	023 UC04279	SOIL	8290	678HPF	0.00000419	В	U-7	UGG
AWKZ	OBS-95-20	025 UC04281	SOIL	8290	234HXF	0.000000473	JPB	U-7	UGG
AWKZ	OBS-95-20	025 UC04281	SOIL	8290	678HPF	0.00000198	JPB	U-7	UGG
AWKZ	OBS-95-20	025 UC04281	SOIL	8290	OCDF	0.00000353	JPB	U-7	UGG
AWKZ	OBS-95-21	029 UC04316	SOIL	8290	678HPD	0.00000750	В	U-7	UGG
AWKZ	OBS-95-21	029 UC04316	SOIL	8290	678HPF	0.0000189	В	U-7	UGG
AWKZ	OBS-95-21	029 UC04316	SOIL	8290	78HXDF	0.00000448	В	U-7	UGG
AWKZ	OBS-95-21	029 UC04316	SOIL	8290	OCDD	0.0000575	В	U-7	UGG
AWKZ	OBS-95-22	030 UC04317	SOIL	8290	78HXDF	0.00000654	В	U-7	UGG
AWKZ	OBS-95-23	031 UC04318	SOIL	8290	678HPF	0.0000172	В	U-7	UGG
AWKZ	OBS-95-23	031 UC04318	SOIL	8290	78HXDF	0.00000409	В	U-7	UGG
AWKZ	OBS-95-24	032 UC04319	SOIL	8290	678HPD	0.00000332	В	U-7	UGG
AWKZ	OBS-95-24	032 UC04319	SOIL	8290	678HPF	0.0000546	В	U-7	UGG
AWKZ	OBS-95-24	032 UC04319	SOIL	8290	78HXDF	0.0000193	JPB	U-7	UGG
AWKZ	OBS-95-24	032 UC04319	SOIL	8290	OCDD	0.0000205	В	U-7	UGG
AWKZ	OBS-95-25	033 UC04320	SOIL	8290	678HPD	0.00000493	В	U-7	UGG
AWKZ	OBS-95-25	033 UC04320	SOIL	8290	678HPF	0.00000611	В	U-7	UGG
AWKZ	OBS-95-25	033 UC04320	SOIL	8290	789HPF	0.00000899	JPB	U-7	UGG
AWKZ	OBS-95-25	033 UC04320	SOIL	8290	78HXDF	0.0000306	В	U-7	UGG
AWKZ	OBS-95-25	033 UC04320	SOIL	8290	OCDD	0.0000390	В		UGG

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	Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
	AWKZ	OBS-95-26	034 UC04321	SOIL	8290	78HXDF	0.0000108	В	U-7	UGG
	AWKZ	OBS-95-27	035 UC04322	SOIL	8290	234HXF	LT 0.00000400		UJ-19	UGG
1	AWKZ	OBS-95-27	035 UC04322	SOIL	8290	678HPF	0.00000286	В	UJ-7,19	UGG
	AWKZ	OBS-95-27	035 UC04322	SOIL	8290	678HXF	LT 0.000000280		UJ-19	UGG
	AWKZ	OBS-95-27	035 UC04322	SOIL	8290	789HPF	LT 0.00000110		UJ-19	UGG
/	AWKZ	OBS-95-27	035 UC04322	SOIL	8290	789HXF	LT 0.00000570		UJ-19	UGG
1	AWKZ	OBS-95-27	035 UC04322	SOIL	8290	78HXDF	LT 0.000000410		UJ-19	UGG
	AWKZ	OBS-95-27	035 UC04322	SOIL	8290	OCDD	0.0000206	В	UJ-7,19	UGG
	AWKZ	OBS-95-27	035 UC04322	SOIL	8290	OCDF	0.0000935		J-19	UGG
	AWKZ	OBS-95-28	036 UC04323	SOIL	8290	678HPF	0.0000110	В	U-7	UGG
1	AWKZ	OBS-95-28	036 UC04323	SOIL	8290	789HPF	0.00000249	JPB	U-7	UGG
1	AWKZ	OBS-95-28	036 UC04323	SOIL	8290	78HXDF	0.00000337	В	U-7	UGG
1	AWBP	OBS-95-29	005 UC04325	SOIL	JS12	CR	12.9		J-21	UGG
A	AWBQ	OBS-95-29	005 UC04325	SOIL	B9	AS	6.86		J-5B	UGG
1	AWBS	OBS-95-29	003 UC04325	SOIL	7841	TL	LT 1.00		UJ-10	UGG
1	AWBU	OBS-95-29	005 UC04325	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
1	AWBP	OBS-95-30	006 UC04327	SOIL	JS12	CR	19.7		J-21	UGG
A	WBQ	OBS-95-30	006 UC04327	SOIL	B9	AS	4.58		J-5B	UGG
A	AWBS	OBS-95-30	007 UC04327	SOIL	7841	TL	LT 1.00		UJ-10	UGG
A	WBU	OBS-95-30	006 UC04327	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
1	WBP	OBS-95-31	007 UC04329	SOIL	JS12	CR	13.2		J-21	UGG
A	WBQ	OBS-95-31	007 UC04329	SOIL	B9	AS	4.98		J-5B	UGG
A	WBS	OBS-95-31	008 UC04329	SOIL	7841	TL	LT 1.00		UJ-10	UGG
Α	WBU	OBS-95-31	007 UC04329	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
	WBP	OBS-95-32	008 UC04332	SOIL	JS12	CR	8.89		J-21	UGG
Α	WBQ	OBS-95-32	008 UC04332	SOIL	B9	AS	4.54		J-5B	UGG
Α	WBS	OBS-95-32	009 UC04332	SOIL	7841	TL	LT 1.00		UJ-10	UGG
A	WBU	OBS-95-32	008 UC04332	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
⊢		OBS-95-33	009 UC04333	SOIL	JS12	CR	19.5		J-21	UGG
-		OBS-95-33	009 UC04333	SOIL	B9	AS	8.75		J-5B	UGG
Δ	WBS	OBS-95-33	010 UC04333	SOIL	7841	TL	LT 1.00		UJ-10	UGG
$\vdash$		OBS-95-33	009 UC04333	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
$\vdash$	<del></del> +	OBS-95-34	010 UC04336	SOIL	JS12	CR	15.1		J-21	UGG
$\vdash$		OBS-95-34	010 UC04336	SOIL	B9	AS	7.22		J-5B	UGG
$\vdash$	<del></del>	OBS-95-34	011 UC04336	SOIL	7841	TL	LT 1.00		UJ-10	UGG
$\vdash$		OBS-95-34	010 UC04336	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
<u> </u>	<del></del> +	OBS-95-35	016 UC04272	SOIL	8290	678HPF	0.00000513	DB	U-7	UGG
_		OBS-95-36	026 UC04282	SOIL	8290	678HPF	0.00000181	DJPB	U-7	UGG
A	WKZ	OBS-95-36	026 UC04282	SOIL	8290	678HXF	0.000000196	DJPB	U-7	UGG

Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units	
AWKZ	OBS-95-36	026 UC04282	SOIL	8290	OCDF	0.00000380	DJPB	U-7	UGG	1
AWKZ	OBS-95-36	026 UC04282	SOIL	8290	TCDF	0.00000619	DJPB	U-7	UGG	].
AWKZ	OBS-95-37	037 UC04324	SOIL	8290	678HPF	0.00000791	DB	U-7	UGG	1,
AWKZ	OBS-95-37	037 UC04324	SOIL	8290	789HPF	0.00000153	DJPB	U-7	UGG	١,
AWBP	OBS-95-38	011 UC04337	SOIL	JS12	CR	17.7	D	J-21	UGG	1
AWBQ	OBS-95-38	011 UC04337	SOIL	B9	AS	6.27	D	J-5B	UGG	
AWBS	OBS-95-38	012 UC04337	SOIL	7841	TL	LT 1.00	D	UJ-10	UGG	١.
AWBU	OBS-95-38	011 UC04337	SOIL	Y9	HG	LT 0.0500	D	UJ-7	UGG	١.
AWBP	OBS-95-39	014 UC04343	SOIL	JS12	CR	16.9		J-21	UGG	١.
AWBQ	OBS-95-39	014 UC04343	SOIL	B9	AS	5.57		J-5B	UGG	١.
AWBS	OBS-95-39	015 UC04343	SOIL	7841	TL	LT 1.00		UJ-10	UGG	
AWBU	OBS-95-39	014 UC04343	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG	
AWBP	OBS-95-40	012 UC04339	SOIL	JS12	CR	19.1		J-21	UGG	
AWBQ	OBS-95-40	012 UC04339	SOIL	B9	AS	6.00		J-5B	UGG	
AWBS	OBS-95-40	013 UC04339	SOIL	7841	TL	LT 1.00		UJ-10	UGG	ĺ
AWBU	OBS-95-40	012 UC04339	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG	/
AWBP	OBS-95-41	013 UC04341	SOIL	JS12	CR	17.1		J-21	UGG	/
AWBQ	OBS-95-41	013 UC04341	SOIL	B9	AS	5.90		J-5B	UGG	-
AWBS	OBS-95-41	014 UC04341	SOIL	7841	TL	LT 1.00		UJ-10	UGG	
AWBU	OBS-95-41	013 UC04341	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG	



# DATA QUALIFIER SUMMARY TABLE FOR BACKGROUND AND FIELD BLANK SAMPLES

Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units	
AVZD	3ER-67	005 UC04285	WATER	SD25	SE	LT 2.53		UJ-10	UGL	1 -
AVZD	3ER-68	006 UC04286	WATER	SD25	SE	LT 2.53		UJ-10	UGL	] /
AVZD	3ER-69	007 UC04349	WATER	SD25	SE	LT 2.53		UJ-10	UGL	-
AVZD	3FB-P	008 UC04353	WATER	SD25	SE	LT 2.53		UJ-10	UGL	1 /
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	678HPD	0.00000655	В	<b>U-7</b>	UGG	1 -
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	678HPF	0.0000221	В	U-7	UGG	1/
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	78HXDF	0.00000762	В	U-7	UGG	1-
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	OCDD	0.0000301	В	U-7	UGG	1-
AWKZ	BKS-95-07	040 UC04346	SOIL	8290	678HPF	0.0000221	В	U-7	UGG	_
AWKZ	BKS-95-07	040 UC04346	SOIL	8290	78HXDF	0.00000457	В	U-7	UGG	-
AWKZ	BKS-95-08	041 UC04347	SOIL	8290	678HPD	0.00000352	В	U-7	UGG	-
AWKZ	BKS-95-08	041 UC04347	SOIL	8290	678HPF	0.00000511	В	U-7	UGG	1-
AWKZ	BKS-95-08	041 UC04347	SOIL	8290	OCDD	0.0000266	В	U-7	UGG	_
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	678HPD	0.00000320	В	U-7	UGG	-
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	678HPF	0.00000333	В	U-7	UGG	-
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	78HXDF	0.0000166	JPB	U-7	UGG	_
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	OCDD	0.0000186	В	U-7	UGG	

**Environmental Science and Chemistry** 

# **DATA QUALITY ASSESSMENT**

# TOOELE ARMY DEPOT—NORTH AREA DAAA15-90-D-0007, TASK 0003

# SWMU 8 SMALL ARMS FIRING RANGE

# Prepared for:

RUST Environment and Infrastructure 743 Horizon Court, Suite 240 Grand Junction, Colorado 81506

# Prepared by:

EcoChem, Inc. 801 Second Avenue, Suite 1401 Seattle, Washington 98104

EcoChem Project Number: 8901-30

December 20, 1994

Approved for Release:

Mark T. Brindle Project Manager EcoChem, Inc.

# **DATA QUALITY ASSESSMENT SUMMARY**

# Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on soil samples and associated laboratory quality control samples. Refer to the Sample Index for sample identifications.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Primary	Secondary
SWMU 8	Mercury	ANGK	Y9 (SOIL)	Jason Ai	W. Jaime Bruton

Data assessment was based on the QC criteria recommended in the above listed method; the Tooele Army Depot—North Area QC Plan; USEPA Functional Guidelines for Organic and Inorganic Data Review; and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

Copies of the qualified transfer files are included as APPENDIX A. Each lot report also contains a summary table of qualified results. Data Quality Assessment Worksheets, Communication, and Corrective Action Records have been placed in labeled envelopes with the original data packages.

**DATA VALIDATION QUALIFIER CODES** 

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.
R	Unreliable result. Data should not be used. Analyte may or may not be present in the sample.
J	Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality

Assessment Report should be consulted for reason.

UJ

Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report should be consulted for reason.

# SITE DATA QUALITY SUMMARY: SWMU 8—SMALL ARMS FIRING RANGE

# Mercury

One lot of mercury analyses of soil samples using Method Y9 was reviewed. All results are acceptable for use without qualification.

# DATA QUALITY ASSESSMENT MERCURY—CVAA ANALYSES: SOIL

METHOD: Y9 Lot No.: ANGK

# I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANGK were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

# II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody (COC) forms for Lot ANGK were completed properly, and all samples listed in the COC forms were analyzed. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for Lot ANGK samples. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. A minimum of 10% of the field ID and laboratory ID were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

# III. FIELD QC SUMMARY

Three sets of field duplicate samples (SAS-94-04/SAS-94-21, SAS-94-09/SAS-94-22, and SAS-94-19/SAS-94-23) were analyzed and reviewed. Mercury was not detected in these samples. The relative percent difference (RPD) values were not calculable.

No field blanks were submitted with Lot ANGK samples.

# IV. TECHNICAL ASSESSMENT

# 1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 28 days from date of collection to analysis.

# 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

For the initial calibration, the minimum number of standards were used, which met the method criterion. The linearity requirement of  $r \ge to 0.995$  was met. The laboratory analyzed a continuing calibration standard every ten samples as required. All percent recovery (%R) values of initial and continuing calibration verifications were within the control limit of 80% to 120%.

# 3.0 Blank Analyses: ACCEPTABLE/All criteria met.

Calibration blanks (ICB and CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated sample data. Continuing calibration blanks were analyzed after each continuing calibration as required. Preparation blanks were prepared with each digestion batch as required. No target analytes were detected in the blanks at or above the reporting limits.

# 4.0 Matrix Spike/Matrix Spike Duplicate Sample Analyses: ACCEPTABLE/All criteria met.

Two sets of MS/MSD analyses were performed on Samples SAS-94-01 and SAS-94-21. The (%R) values ranged from 106.8% to 116.4%, which was within the Functional Guidelines (2/94) control limits of 75% to 125%. The (RPD) values for these two sets of MS/MSD analyses were 7% and 1%, respectively, which were within the control limit of 35%.

# **5.0 High Spike and Low Spike Analyses:** ACCEPTABLE/With the following discussion.

Qualified Data: None.

## Discussion:

Two high spike and one low spike analyses were performed with each sample lot. The %R values of both high spike analyses were 109.4% and 113.0%, which were within the control chart limits of 94.9% to 128.3%. The percent recovery of the low spike analysis was 91%, which was slightly below the control chart lower limit of 102.2%. Since these percent recoveries were within the control limits specified in the Functional Guidelines (2/94), no action was taken.

# 6.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limits for mercury were reviewed. All reporting limits matched the certified reporting limits listed in the laboratory SOP.

# 7.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

# V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAEC Chemistry Branch Response indicates that Lot ANGK is acceptable. The laboratory noted high spike recovery values trending below the mean and low spike recovery values below the lower control chart limit. No qualification is recommended based on these observations.

The data, as reported, are acceptable for use.

**Environmental Science and Chemistry** 

# **DATA QUALITY ASSESSMENT**

# TEAD-N Remedial Investigation Phase II DAAA15-90-D-0007, Task Order 0003

# SWMU 8 Small Arms Firing Range

# Prepared for:

RUST Environment and Infrastructure 743 Horizon Court, Suite 240 Grand Junction, Colorado 81506

# Prepared by:

EcoChem, Inc. 801 Second Avenue, Suite 1401 Seattle, Washington 98104

EcoChem Project Number: C8909-20

February 9, 1996

**Approved for Release:** 

Eric Strout

Sr. Project Chemist

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# DATA QUALITY ASSESSMENT SUMMARY

# Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on the data for soil and water samples and associated laboratory quality control sample analyses.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Validation Level	Primary	Secondary
SWMU 8	ICP Metals	AVZA	SS12 (WATER)	Tier 1	Bob Olsiewski	Jason Ai
	ICP Metals	AVXW	JS12 (SOIL)	Tier 1	Bob Olsiewski	Jason Ai
	Arsenic	AVZB	AX8 (WATER)	Tier 1	Jason Ai	Bob Olsiewski
	Arsenic	AVXX	B9 (SOIL)	Tier 1	Jason Ai	Bob Olsiewski
	Antimony	AVZG	7041 (WATER)	Tier 1	Jason Ai	Bob Olsiewski
	Antimony	AVYB	7041 (SOIL)	Tier 1	Jason Ai	Bob Olsiewski
	Antimony	AVYC	7041 (SOIL)	Tier 1	Jason Ai	Bob Olsiewski
	Selenium	AVZD	SD25 (WATER)	Tier 1	Jason Ai	Bob Olsiewski
	Selenium	AVXY	JD20 (SOIL)	Tier 1	Jason Ai	Bob Olsiewski
	Thallium	AVZF	7841 (WATER)	Tier 1	Jason Ai	Bob Olsiewski
	Thallium	AVXZ	7841 (SOIL)	Tier 1	Jason Ai	Bob Olsiewski
	Thallium	AVYA	7841 (SOIL)	Tier 1	Jason Ai	Bob Olsiewski
	Mercury	AVUQ	CC8 (WATER)	Tier 1	Jason Ai	Bob Olsiewski
	Mercury	AVYQ	Y9 (SOIL)	Tier 1	Jason Ai	Bob Olsiewski

Data assessment was based on the QC criteria recommended in the above listed methods; the Tooele Army Depot—North Area QC Plan; USEPA National Functional Guidelines for Inorganic Data Review (2/94); and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

A summary table of all qualified data for SWMU-8 is included as APPENDIX A. Each lot report also contains a summary table of qualified results. Data qualifiers are defined below. A numerical code has been added to each data qualifier to indicate the reason for the qualifier. A list of all of the reason codes is included as APPENDIX B. Data Quality Assessment Worksheets, Communication, and Corrective Action Records (if any) have been placed in labeled envelopes with the original data packages.

RUST E&I: Tooele North RI Phase II Data Assessment

# **DATA VALIDATION QUALIFIER CODES**

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.
R	Unreliable result. Data should not be used. Analyte may or may not be present in the sample.
J	Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality Assessment Report should be consulted for reason.
UJ	Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report should be consulted for reason.

# SITE DATA QUALITY SUMMARY

### **ICP Metals**

One lot of ICP-metal analyses of soil samples using Method JS12 was reviewed. The precision and accuracy were acceptable, based on the percent recovery values for spiked analytes and the relative percent difference values for duplicate analyses. Matrix spike/matrix spike duplicate (MS/MSD) analyses were not submitted, although standard spikes (laboratory control samples) were analyzed. No qualifiers were issued to any of the soil samples.

One lot of ICP-metal analyses of water samples using Method SS12 was reviewed. The water samples consisted of field blanks and equipment rinsate blanks associated with the soil samples. Calcium was detected in the blanks. No action was taken, as it was not possible to directly associate a field QC blank with a given soil sample. The precision and accuracy were acceptable for this lot, based on the percent recovery values for spiked analytes and the relative percent difference values for duplicate analyses. No qualifiers were issued to any of the water samples.

# **Arsenic**

One lot of arsenic analyses of soil samples using Method B9 was reviewed. The precision and accuracy were acceptable, based on the percent recovery values for spiked analytes and the relative percent difference values for duplicate analyses. No qualifiers were issued.

One lot of arsenic analyses of water samples using Method AX8 was reviewed. The water samples consisted of field blanks and equipment rinsate blanks associated with the soil samples. Arsenic was not detected in the blanks. The precision and accuracy were acceptable for this lot, based on the percent recovery values for spiked analytes and the relative percent difference

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values for duplicate analyses. Matrix spike/matrix spike duplicate (MS/MSD) analyses were not submitted, although standard spikes (laboratory control samples) were analyzed. No qualifiers were issued to any of the water samples.

# **Antimony**

Two lots of antimony analyses of soil samples using USEPA Method 7041 were reviewed. The precision and accuracy were acceptable for these lots, based on the percent recovery values for most spiked analytes and the relative percent difference values for duplicate analyses. All antimony detection limits were estimated (UJ) in lots AVYB and AVYC due to low percent recovery values in the associated matrix spike/matrix spike duplicate analyses. No other qualifiers were issued.

One lot of antimony analyses of water samples using USEPA Method 7041 was reviewed. The water samples consisted of field blanks and equipment rinsate blanks associated with the soil samples. Antimony was not detected in the blanks. The precision and accuracy were acceptable for this lot, based on the percent recovery values for spiked analytes and the relative percent difference values for duplicate analyses. No qualifiers were issued to any of the water samples.

# Selenium

One lot of selenium analyses of soil samples using Method JD20 was reviewed. The precision and accuracy were acceptable, based on the percent recovery values for most spiked analytes and the relative percent difference values for duplicate analyses. All selenium results were estimated in lot AVXY due to low percent recovery values in the associated matrix spike/matrix spike duplicate (MS/MSD) analyses. No other qualifiers were issued.

One lot of selenium analyses of water samples using Method SD25 was reviewed. The water samples consisted of field blanks and equipment rinsate blanks associated with the soil samples. Selenium was not detected in the blanks. The precision and accuracy were acceptable for this lot, based on most of the percent recovery values for spiked analytes and the relative percent difference values for duplicate analyses. No MS/MSD analyses were submitted. All selenium results were estimated in lot AVZD due to low percent recovery values in the low spike analysis. No other qualifiers were issued to any of the water samples.

# **Thallium**

Two lots of thallium analyses of soil samples using USEPA Method 7841 were reviewed. The precision and accuracy were acceptable for these lots, based on the percent recovery values for most spiked analytes and the relative percent difference values for duplicate analyses. All thallium detection limits were estimated (UJ) in lot AVYA due to low percent recovery values in the associated laboratory control sample analyses. No other qualifiers were issued.

One lot of thallium analyses of water samples using USEPA Method 7841 was reviewed. The water samples consisted of field blanks and equipment rinsate blanks associated with the soil samples. Thallium was not detected in the blanks. The precision and accuracy were acceptable



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for this lot, based on the percent recovery values for spiked analytes and the relative percent difference values for duplicate analyses. No qualifiers were issued to any of the water samples.

# Mercury

One lot of mercury analyses of soil samples using Method Y9 was reviewed. The precision and accuracy were acceptable for these lots, based on the percent recovery values for most spiked analytes and the relative percent difference values for duplicate analyses. The positive mercury results in Lot AVYQ were estimated (J) due to a high percent recovery values in the associated low spike analyses. No other qualifiers were issued.

One lot of mercury analyses of water samples using Method CC8 was reviewed. The water samples consisted of field blanks and equipment rinsate blanks associated with the soil samples. The precision and accuracy were acceptable for this lot, based on the percent recovery values for spiked analytes and the relative percent difference values for duplicate analyses. No MS/MSD analyses were submitted. No qualifiers were issued to any of the water samples.

# TIER I DATA QUALITY ASSESSMENT GINAL METALS-ICP ANALYSES: WATER

METHOD: SS12 LOT: AVZA

Analytical data for 3 equipment blank samples and one field blank sample were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 28 and 29, 1995, and were analyzed by DataChem.

# **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration

- \* Blank Analyses (Method and Field)
- \* Matrix Spike Sample Analyses
- Low Spike and High Spike Analyses
- Duplicate Sample Analyses
   Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# Blank Analyses (Field)

Three equipment blanks and one field blank were submitted for this lot. Calcium was detected in these blanks at concentrations ranging from  $107 \mu g/L$  and  $243 \mu g/L$ . Since samples associated with these equipment or field blanks were not submitted with this sample lot, no action was taken.

# **Matrix Spike Sample Analyses**

No matrix spike/matrix spike duplicate (MS/MSD) analyses were performed for this lot. No action was taken on this basis.

# Low Spike and High Spike Analyses

One low spike and two high spike analyses were performed with this sample lot. Percent recovery (%R) values were evaluated based on the control chart upper and lower limits.



The barium %R value in the low spike sample was greater than the laboratory control limits, and the %R values for cadmium and lead in the low spike sample were less the laboratory control limits. Only the copper %R values in the high spike samples were within the laboratory control limits; all other analyte %R values in the high spike samples were less than the laboratory control limits. Since all of these %R values were within the control limits established by *National Functional Guidelines*, no qualifiers were assigned.

# **Duplicate Sample Analyses**

No laboratory duplicate analyses were performed for this lot. No action was taken on this basis.

# **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the high spike analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the low spike and high spike %R values being within control limits, except where noted.

All data, as reported, are acceptable for use.

# TIER I DATA QUALITY ASSESSMENT METALS-ICP ANALYSES: SOIL METHOD: JS12

LOT: AVXW

Analytical data for 30 soil samples and three field duplicate samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 27 and 28, 1995 and were analyzed by DataChem.

# **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration

- Blank Analyses
   Matrix Spike Sample Analyses
- Low Spike and High Spike Analyses
- Duplicate Sample Analyses
- Field Duplicate Sample Analyses
   Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# Blank Analyses

Aluminum, barium, calcium, iron, potassium, magnesium, manganese, vanadium, and zinc were detected in one QC blank (BL-104712-1). Since this soil blank sample (from RMA soil, R3D-425) was unwashed soil, no qualifications of associated sample data were recommended.

# Low Spike and High Spike Analyses

One low spike and two high spike analyses were performed with this sample lot. Percent recovery (%R) values were evaluated based on the control chart upper and lower limits.

The beryllium %R value in the laboratory control sample LCS QC104712-1 was greater than the laboratory control limits of 95.6% to 104.8% at 105.0%. The lead %R value in the low spike sample was less than the control limits of 96.1% to 117.9% at 95.3%. The beryllium %R value in the first high spike sample was greater than the control limits of 95.0% to 99.8% at 99.9%. The beryllium %R value in the second high spike sample was greater than the control limits of 95.0% to 99.8% at 100.0%. The copper %R value in the second high spike sample was greater than the

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AVXW-1

EcoChem, Inc.

control limits of 96.0% to 101.2% at 102%. Since all of the above %R values were within the control limits established by *National Functional Guidelines*, no qualifiers were assigned.

# **Duplicate Sample Analyses**

No laboratory sample duplicate analyses were performed for this lot. No action was taken on this basis.

# Field Duplicate Sample Analyses

The calcium relative percent difference (RPD) value (72.3%) for the field duplicate pair SAB-95-10B/SAB-95-10B FD was greater than the control limit of 50%. No qualifiers were assigned on this basis.

# **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the QC criteria-compliant RPD values of the MS/MSD analyses. Accuracy was acceptable, as demonstrated by the MS/MSD and Low/High Spike %R values being within control limits, except where noted.

All data, as reported, are acceptable for use.

CEIGINAL

# Laboratory and Field Duplicate Report

	SAB-95-01A, SAB-95-01B, SAB-95-02A, SAB-95-02B, SAB-95-03A, SAB-95-03B, SAB-95-04A, SAB-95-04B, SAB-95-04B, SAB-95-05A, SAB-95-05B, SAB-95-06A, SAB-95-06B, SAB-95-07A, SAB-95-07B, SAB-95-08A, SAB-95-08B, SAB-95-09B, SAB-95-10A, SAB-95-10A (FD), SAS-95-01, SAS-95-02, SAS-95-03, SAS-95-04, SAS-95-05, SAS-95-06, SAS-95-07, SAS-95-0		Qualification Notes																6	٠. سيد	; •			4.00 \$ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	7 7	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The state of the s	Charles (Charles )	R.	THE PARTY OF THE P	er.		
Associated Field Samples	5-02B, SAB-95-03A, 8 5-06A, SAB-95-06B, 8 5-09B, SAB-95-10A, 8 95-03, SAS-95-04, SA	(a) A company	Control Limit Quali			20.0	20.0	+/-2*RL	50.0	50.0	90.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0			50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	
Associate	SAB-95-02A, SAB-9-9 SAB-95-05B, SAB-9-8-9-9-9-9-9-9-0-9-02, SAB-95-02, SAB-95	Accuracy	RPD Difference			24.9	21.9	0.210	23.2	13.2	20.4	18.9	20.9	21.3	21.3	19.2	16.7	26.9	17.2	20.5	23.3			4.9	-	5.9	3.8	6.2	5.6	1.5	1.0	3.6	
	SAB-95-01A, SAB-95-01B, SAB-95-02A, SAB-95-02B, SAB-95-03 SAB-95-04B, SAB-95-05A, SAB-95-05B, SAB-95-06A, SAB-95-08 SAB-95-08A, SAB-95-08B, SAB-95-09A, SAB-95-09B, SAB-95-10 SAB-95-10B (FD), SAS-95-01, SAS-95-02, SAS-95-03, SAS-95-05	Results	Sample Dup			15600	170	0.668	31100	6.12	21.6	16.2	18800	3810	11200	389	497	15.5	20.5	32.5	69.3			11800D	140D	0.478D	34400D	5.23D	20.7D	11.8D	16500D	2610D	
	SAE SAE SAE	2 ez	Sample	-		12100	136	0.458U	24700	5.36	17.6	13.4	15200	3080	9020	321	421	11.8	17.3	26.5	54.8			11200	138	0.507	33100	4.92	19.6	11.9	16400	2520	
		Reporting	Limit	031 UC0425		0.00	0.00	0.458	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	00.00	0.00	0.00	038 UC04259		0.00	0.00	0.00	0.00	0.00	0.00	00:00	0.00	0.00	
SDG: AVXW	, ,		Quality Control Samples	Field Duplicate Set: Samples 028 UC04251, 031 UC04254	JS12 (UGG)	AL.	BA	BE	V.	00	CR	no	Ш	×	MG	Z	V.	Z	PB	. >	NZ	Field Duplicate Set: Samples 036 UC04257, 038 UC04259	JS12 (UGG)	AL	ВА	BE	CA	00	CR	no	H.	¥	

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# Laboratory and Field Duplicate Report

Analytical Batch ID:         AVXW         SAB-95-014, SAB-95-028, SAB-95-018           Analytical Batch ID:         AVXW         SAB-95-018, SAB-95-018           Analytical Batch ID:         AVXW         SAB-95-018, SAB-95-018           Field Duplicate Set: Samples 035 UC04259, 38 UC04259         SAB-95-108 (FD), SAS-95-01, SAS-95-01           MN         0.00         314         318D         4.48           NI         0.00         12.7         12.1D         4.8           PB         0.00         12.7         12.1D         4.8           NI         0.00         12.7         12.1D         4.8           PB         0.00         16.1         12.7D         2.2           V         0.00         16.1         12.7D         2.2           AL         0.00         16.1         17.7D         4.7           BA         0.00         16.1         17.7D         4.7           CA         0.00         137         145D         5.3           CA         0.00         137         145D         5.3           CA         0.00         1.3         14.0         7.8           CA         0.00         1.05         1.4         1.1	95-018, SA 95-054, SA 95-088, SA AS-95-01,	A, SAB-95-03B, SAB-95-04A, B, SAB-95-07A, SAB-95-07B, A, SAB-95-10B, SAS-95-05, SAS-95-06,
AVXW SOIL  nples 036 UC04257, 038 UC04259  0.00 314 0.00 426 0.00 12.7 0.00 12.7 0.00 137 0.450 0.450U 0.00 66400 0.00 66400 0.00 14800 0.00 14800 0.00 14800 0.00 14800 0.00 14800 0.00 14800 0.00 14800 0.00 14800 0.00 14800 0.00 126 0.00 126 0.00 126 0.00 126 0.00 126	9500 B. 3AB-95-05A , SAB-95-05B , SAB-95-06B , SAB-95-06B , SAB-95-06B , SAB-95-09B , SAB-95-09B , SAB-95-09B , SAB-95-09B , SAS-95-01 , SAS-95-01 , SAS-95-02 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-01 , SAS-95-01 , SAS-95-02 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-01 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-01 , SAS-95-01 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-04 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-04 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-02 , SAS-95-03 , SAS-95-04 , SAS-95-03 , SAS-95-04 , SAS-95-04 , SAS-95-03 , SAS-95-04 , SAS-95-05 , S	8, SAB-95-078, SAB-95-078, A, SAB-95-108, SAS-95-05, SAS-95-06,
### Set: Samples 036 UC04257, 038 UC04259  10.00  1	95000 11300D 114D 114D 114D 114D 114D 114D 114D 1	, SAB-95-108 , SAS-95-06 , SAS
ate Set: Samples 036 UC04257, 038 UC04259  0.00  0.00  426  0.00  12.7  0.00  12.7  0.00  12.7  0.00  13.7  0.450  0.00  13.7  0.450  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  17.6  0.00  287  0.00  18.7  0.00  287  0.00  287  0.00  18.7  0.00  287  0.00  287  0.00  287  0.00  287  0.00  287  0.00  287  0.00  287  0.00  287  0.00  287  0.00  287  0.00  287  0.00  287  0.00  287  0.00  287	95000 3.8 313D 4.14D 3.0 4.8 50.0 12.7D 54.6D 4.7 11300D 8.3 0.494D 72.3 11.4D 5.2 6.87D 50.0 6.87D 50.0 11.4D 7.8 50.0	
ate Set: Samples 036 UC04257, 038 UC04259  U.UU 314 313D  0.00 426 414D  0.00 12.7 12.1D  0.00 15.1 12.7D  0.00 29.8 31.4D  1.27D  0.00 10400 11300D  0.00 10400 11300D  0.00 66400 31100D  0.00 66400 31100D  0.00 17.6 19.8D  0.00 14800 15.70  0.00 14800 15.70  0.00 12.87 290D  0.00 287 290D  0.00 409 417.D  0.00 12.6 13.0D  0.00 26.7 28.0D  0.00 26.7 51.9D	3.8 0.4 3.0 4.8 23.2 5.2 4.7 4.7 8.3 5.3 5.3 7.3 7.8	
0.00 314 313D 0.00 426 414D 0.00 12.7 12.1D 0.00 22.8 31.4D 0.00 22.8 31.4D 0.00 22.8 31.4D 0.00 10.450 0.450D 0.00 66400 31100D 0.00 6530 66800 0.00 14800 15700D 0.00 14800 15700D 0.00 2490 2620D 0.00 2895 8590D 0.00 2807 290D 0.00 12.6 13.0D 0.00 26.7 28.0D 0.00 26.7 51.9D	3.8 0.4 3.0 4.8 23.2 5.2 4.7 4.7 8.3 5.3 5.3 7.2.3 7.8	
0.00 426 414D 0.00 12.7 12.1D 0.00 29.8 31.4D 0.00 29.8 31.4D 0.00 20.00 152.1 54.6D 0.00 10450 0.450U 0.494D 0.00 66400 31100D 0.00 6530 6687D 0.00 17.6 19.8D 0.00 14800 15700D 0.00 2490 2620D 0.00 8950 8590D 0.00 287 290D 0.00 12.6 113.0D 0.00 12.6 113.0D 0.00 26.7 28.0D 0.00 26.7 51.9D	0.4 3.0 4.8 23.2 5.2 4.7 4.7 6.3 5.3 5.3 7.8 11.9	
0.00     426     414D       0.00     12.7     12.1D       0.00     29.8     31.4D       0.00     52.1     54.6D       0.00     137     145D       0.00     137     145D       0.00     66400     31100D       0.00     5.30     687D       0.00     17.6     19.8D       0.00     10.6     11.4D       0.00     2490     2620D       0.00     2490     2850D       0.00     2490     2850D       0.00     2490     435D       0.00     12.6     13.0D       0.00     12.6     14.7D       0.00     26.7     51.9D       0.00     26.7     51.9D	3.0 4.8 23.2 5.2 4.7 8.3 5.3 5.3 7.3 7.3 7.8	
0.00	4.8 23.2 5.2 4.7 8.3 5.3 5.3 7.8 11.9	
0.00     16.1     12.7D       0.00     29.8     31.4D       0.00     52.1     54.6D       0.00     10400     11300D       0.00     137     145D       0.00     66400     31100D       0.00     66400     31100D       0.00     66400     31100D       0.00     17.6     19.8D       0.00     14800     15700D       0.00     2490     2620D       0.00     12.6     13.0D       0.00     14.4     14.7D       0.00     26.7     51.9D       0.00     52.7     51.9D	23.2 5.2 4.7 8.3 5.3 5.3 7.8 11.9	
0.00     29.8     31.4D       0.00     52.1     54.6D       31.4D     54.6D       0.00     10400     11300D       0.00     137     145D       0.00     66400     31100D       0.00     66400     31100D       0.00     17.6     19.8D       0.00     17.6     19.8D       0.00     10.5     11.4D       0.00     2490     2620D       0.00     2490     435D       0.00     12.6     13.0D       0.00     14.4     14.7D       0.00     26.7     51.9D       0.00     52.7     51.9D	5.2 8.3 5.3 72.3* 25.8 11.9	
0.00     52.1     54.6D       sate Set: Samples 037 UC04288, 039 UC04280     10400     11300D       0.00     137     145D       0.00     137     145D       0.00     66400     31100D       0.00     66400     31100D       0.00     17.6     19.8D       0.00     17.6     19.8D       0.00     14800     15700D       0.00     2490     2620D       0.00     287     290D       0.00     409     435D       0.00     14.4     14.7D       0.00     26.7     28.0D       0.00     26.7     28.0D       0.00     26.7     51.9D	8.3 5.3 72.3 25.8 11.9	
0.00 10400 11300D 0.00 10400 11300D 0.00 137 145D 0.450 0.450U 0.494D 0.00 66400 31100D 0.00 17.6 19.8D 0.00 14800 15700D 0.00 2490 2620D 0.00 8950 8590D 0.00 287 290D 0.00 409 435D 0.00 12.6 13.0D 0.00 26.7 28.0D 0.00 52.7 51.9D	8.3 5.3 72.3 25.8 11.9	
0.00     10400     11300D       0.00     137     145D       0.450     0.450U     0.494D       0.00     66400     31100D       0.00     17.6     19.8D       0.00     14800     15700D       0.00     14800     15700D       0.00     2490     2620D       0.00     287     290D       0.00     287     290D       0.00     12.6     13.0D       0.00     14.4     14.7D       0.00     26.7     28.0D       0.00     26.7     28.0D       0.00     25.7     51.9D	8.3 5.3 72.3* 25.8 11.9 7.8	
0.00     10400     11300D       0.00     137     145D       0.450     0.450U     0.494D       0.00     66400     31100D       0.00     17.6     19.8D       0.00     14800     15.8D       0.00     14800     15.0D       0.00     2490     2620D       0.00     287     290D       0.00     409     435D       0.00     14.4     14.7D       0.00     26.7     28.0D       0.00     26.7     28.0D       0.00     26.7     51.9D	8.3 5.3 72.3* 25.8 11.9 7.8	
0.050       137       145D         0.450       0.450U       0.494D         0.00       66400       31100D         0.00       17.6       19.8D         0.00       17.6       19.8D         0.00       14800       15700D         0.00       2490       2620D         0.00       287       290D         0.00       409       435D         0.00       12.6       13.0D         0.00       26.7       28.0D         0.00       26.7       28.0D         0.00       26.7       51.9D	5.3 72.3 25.8 11.9 7.8	
0.450       0.450U       0.494D         0.00       66400       31100D         0.00       17.6       19.8D         0.00       14800       15700D         0.00       2490       2620D         0.00       287       290D         0.00       287       290D         0.00       409       435D         0.00       14.4       14.7D         0.00       26.7       28.0D         0.00       26.7       51.9D	72.3°) 0.0437 25.8 11.9 7.8	
0.00       66400       31100D         0.00       5.30       6.87D         0.00       17.6       19.8D         0.00       14800       11.4D         0.00       2490       2620D         0.00       287       290D         0.00       287       290D         0.00       409       435D         0.00       12.6       13.0D         0.00       26.7       28.0D         0.00       26.7       51.9D	72.3*) 26.8 11.9 7.8	
0.00     5.30     6.87D       0.00     17.6     19.8D       0.00     14800     15.700D       0.00     2490     2620D       0.00     287     290D       0.00     287     290D       0.00     409     435D       0.00     14.4     14.7D       0.00     26.7     28.0D       0.00     52.7     51.9D	25.8 11.9 7.8	
0.00     17.6     19.8D       0.00     10.5     11.4D       0.00     2490     2620D       0.00     287     290D       0.00     287     290D       0.00     409     435D       0.00     12.6     13.0D       0.00     26.7     28.0D       0.00     52.7     51.9D	11.9	
0.00     10.5     11.4D       0.00     14800     15700D       0.00     2490     2620D       0.00     287     290D       0.00     409     435D       0.00     12.6     13.0D       0.00     14.4     14.7D       0.00     26.7     28.0D       0.00     52.7     51.9D	7.8	
0.00     14800     15700D       0.00     2490     2620D       0.00     287     290D       0.00     409     435D       0.00     12.6     13.0D       0.00     26.7     28.0D       0.00     26.7     28.0D       0.00     52.7     51.9D		
9.00 2490 2620D 0.00 8950 8590D 0.00 287 290D 0.00 409 435D 0.00 12.6 13.0D 0.00 26.7 28.0D 0.00 52.7 51.9D		
9.00 8950 8590D 0.00 287 290D 0.00 409 435D 0.00 12.6 13.0D 0.00 26.7 28.0D 0.00 52.7 51.9D		6
0.00 287 290D 0.00 409 435D 0.00 12.6 13.0D 0.00 14.4 14.7D 0.00 26.7 28.0D 0.00 52.7 51.9D		· .
0.00     409     435D       0.00     12.6     13.0D       0.00     14.4     14.7D       0.00     26.7     28.0D       0.00     52.7     51.9D		
0.00 12.6 13.0D 0.00 14.4 14.7D 0.00 26.7 28.0D 0.00 52.7 51.9D		
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# TIER I DATA QUALITY ASSESSMENT ARSENIC ANALYSES: WATER METHOD: AX8

LOT: AVZB

Analytical data for four equipment blanks were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 28 and 29, 1995, and were analyzed by DataChem.

# **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration Blank Analyses

- Matrix Spike Sample Analyses
   Low Spike and High Spike Analyses
- Duplicate Sample Analyses (Laboratory and Field)
   Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# Matrix Spike Sample Analyses

No matrix spike/matrix spike duplicate (MS/MSD) analyses were performed for this lot. No action was taken on this basis.

# **Duplicate Sample Analyses**

No laboratory and field duplicate analyses were performed for this lot. No action was taken on this basis.

# **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the high spike analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the low spike and high spike percent recovery (%R) values being within control limits. All data, as reported, are acceptable for use.

RUST E&I: Tooele North Data Assessment

AVZB-1

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# TIER I DATA QUALITY ASSESSMENT ARSENIC ANALYSES: SOIL METHOD: B9

LOT: AVXX

Analytical data for 33 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 27 and 28, 1995, and were analyzed by DataChem.

# **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration Blank Analyses

- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses
- \* Low Spike and High Spike Analyses
- Duplicate Sample Analyses (Laboratory and Field)
   Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# Matrix Spike/Matrix Spike Duplicate Analyses

The laboratory performed matrix spike/matrix spike duplicate (MS/MSD) analyses on Sample SAS-95-11. The MSD percent recovery (%R) value of 6.0% was less than the lower control limit of 75%. Since the MS %R value of 120.4% and the relative percent difference (RPD) value of 34.1% were within the control limits, and since the high and low spike %R values were also acceptable, no qualifiers were assigned on this basis.

# Low Spike and High Spike Analyses

One low spike and two high spike analyses were performed with this sample lot. The low/high spike %R values were evaluated based on the control chart upper and lower limits. The low spike %R value of 113.0% was greater than the upper control limit of 110.4%. As this low spike %R value was within the *National Functional Guidelines* control limits, no qualifiers were assigned. The high spike %R values of 101.2% and 99.6% were within the control limits.

CRIGINAL

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# **Duplicate Sample Analyses**

No laboratory duplicate analyses were performed for this Lot. No action was taken on this basis.

# **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the RPD values of the high spike and MS/MSD analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the low and high spike and MS/MSD %R values being within control limits, except where noted above.

All data, as reported, are acceptable for use.

PINAL

# TIER I DATA QUALITY ASSESSMENT ANTIMONY ANALYSES: WATER METHOD: SW-7041

LOT: AVZG

Analytical data for four equipment blanks were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 28 and 29, 1995, and were analyzed by DataChem.

# **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
Instrument Calibration
Blank Analyses
Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample Analyses
Laboratory Control Sample (LCS) Analyses
Duplicate Sample Analyses (Laboratory and Field)

Graphite Furnace QC Analyses

Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# **Duplicate Sample Analyses**

No field duplicate samples were submitted for this lot. No action was taken on this basis.

# **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the matrix spike/matrix spike duplicate (MS/MSD) analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the laboratory control sample and MS/MSD %R values being within control limits.

All data, as reported, are acceptable for use.

CHIENNAL

Sda	Samui d	m: _1 _: _	T.1.1.1		
<b>Sdg</b> AVRO	Sampid	Fieldid	Labid	Anlmethod	Qctype1
AVRO	ARS-95-10	AFI7000P	030 UC04455M	LW23	MS
AVRO	ARS-95-10	AFI7000P	031_UC04455M	- LW23	MSD
AVRP	ARS-95-10	AFI7000P		ECNS	MS
	ARS-95-10	AFI7000P	022-UC04455M	ECNS	MSD
AVRQ	ARS-95-10	AFI7000P	021 UC04455M	LW27	MS
AVRQ	ARS-95-10	AFI7000P	022 UC04455M	LW27	MSD
AVRR	ARS-95-10	AFI7000P	021 UC04455M	LW30	MS
AVRR	ARS-95-10	AFI7000P	022 UC04455M	LW30	MSD
AVRS	3ER-70	AJC70000	004 UC04464M	ECNW	MS
AVRS	3ER-70	AJC70000	005 UC04464M	ECNW	MSD
AVSY	ARS-95-10	AFP7000P	018 UC04457M	LM25	MS
AVSY	ARS-95-10	AFP7000P	019 UC04457M	LM25	MSD
AVTB	ARS-95-10	AFH7000P	021 UC04454M	KY15	MS
AVTB	ARS-95-10	AFH7000P	022 UC04454M	KY15	MSD
AVVA	ARS-95-10	AFH7000P	021 UC04454M	KF17	MS
AVVA	ARS-95-10	AFH7000P	022 UC04454M	KF17	MSD
AVVS	3ER-70	AIU70000	006 UC04459M	UW29	MS
AVVS	3ER-70	AIU70000	007 UC04459M	UW29	MSD
DVVA	ARS-95-10	AFH7000P	021 UC04454M	LF05	MS
UVVA	ARS-95-10	AFH7000P	022 UC04454M	LF05	MSD
AVXW	SAS-95-10	AFV6800P	032 UC04254M	JS12	MS
AVXW	SAS-95-10	AFV6800P	033 UC04254M	JS12	MSD
AVXX	SAS-95-10	AFV6800P	032 UC04254M	В9	MS
AVXX	SAS-95-10	AFV6800P	033 UC04254M	B9	MSD
AVXY	SAS-95-10	AFV6800P	032 UC04254M	JD20	MS
AVXY	SAS-95-10	AFV6800P	033 UC04254M	JD20	MSD
AVXZ	SAB-95-01A	A536700P	004 UC04228M	7841	MS
AVXZ	SAB-95-01A	A536700P	005 UC04228M	7841	MSD
AVYA	SAS-95-10	AFV6800P	015 UC04254M	7841	MS
AVYA	SAS-95-10	AFV6800P	016 UC04254M	7841	MSD
AVYB	SAB-95-01A	A536700P	004 UC04228M	7041	MS
AVYB	SAB-95-01A	A536700P	005 UC04228M	7041	MSD
AVYC	SAS-95-10	AFV6800P	015 UC04254M	7041	MS
AVYC	SAS-95-10	AFV6800P	016 UC04254M	7041	MSD
AVYQ	SAS-95-10	AFV6800P	032 UC04254M	Y9	MS
AVYQ	SAS-95-10	AFV6800P	033 UC04254M	Y9	MSD
AVZF	3ER-67	AHT6700P	004 UC04285M	7841	MS
AVZE	3ER-67	AHT6700P	005 UC04285M	7841	MSD
AVZG	3ER-68	AIF6800P	006 UC04286M	7041	MS
AVZG	3ER-68	AIF6800P	007 UC04286M	7041	MSD
AWAX	ARS-95-10	AFL7000P	021 UC04456M	KT07	MS
AWAX	ARS-95-10	AFL7000P	022 UC04456M	KT07	MSD
AWBI	ARS-95-10	AFL7000P	019 UC04456M	PRCL	MS
AWBI	ARS-95-10	AFL7000P	020 UC04456M	PRCL	MSD
AWBS	OBS-95-29	AQD6900P	006 UC04325M	7841	MSD
AWBS	OBS-95-29	AQD9600P	005 UC04325M	7841	MS
AWBT	OBS-95-29	AQD6900P	005 UC04325M	7041	MS
AWBT	OBS-95-29	AQD6900P	006 UC04325M	7041	MSD
AWHS	OBP-95-04C	A426600P	014 UC04182M	8290	MS
AWHS	OBP-95-04C	A426600P	015 UC04182M	8290	MSD
AWKZ	OBS-95-04	A046800P	007 UC04264M	8290	MS
AWKZ	OBS-95-04	A046800P	008 UC04264M	8290	MSD
AWKZ	OBS-95-20	AQF6800P	027 UC04282M	8290	MS
AWKZ	OBS-95-20	AQF6800P	028 UC04282M	8290	MSD



# QUALITY CONTROL REPORT

AVZG

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Method...: IT-SW-7041 Analyte...: Antimony Matrix...: WATER

Date Printed...: 12-JAN-1996 09:03 Group Name....: G9609011 Analyst..... T. Cherle Units..... ug/L QC Limit Type...: Full

# Blank Results

Sample ID Sample Name S95CLOCJ BL-104729-1 Blank QC Date 29-DEC-1995 1.19 uq/ = 0.119 uq/g. ND.



# LCS Results

Sample ID Sample Name LCS S95CLOCK QC-104729-1 QC Date Amount Result Percent 29-DEC-1995 Spiked Recovery 46.5 50.0 93.0 46.5

# Matrix Spike Results

Sample ID Sample Name Sample Result QC Date S95CLOCM UC 04286MS 35R-68 Amount 29-DEC-1995 Spiked Recovery -0.570 47.5/ 50.0 47.53 95.2

# Matrix Spike Duplicate Results

Sample ID Sample Name
S95CLOCN UC 04286MSD QC Date MSD Percent Relative % Recovery Difference Result 29-DEC-1995 35R-68 48.7/ 97.4 48.69 Matrix Duplicate Results

Sample ID Sample Name Sample Result QC Date S95CLOCL MD Relative % Difference UC 04285MD 29-DEC-1995 Result 1.63 35R-67 0.16349/4 NO NC NO

# TIER I DATA QUALITY ASSESSMENT ANTIMONY ANALYSES: SOIL METHOD: SW-7041

LOT: AVYB

Analytical data for 15 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and National Functional Guidelines (U.S. EPA, 1991). The samples were collected on November 27, 1995, and were analyzed by DataChem.

# TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

**Technical Holding Times** Instrument Calibration Blank Analyses Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample Analyses Laboratory Control Sample (LCS) Analyses Duplicate Sample Analyses (Laboratory and Field) Graphite Furnace QC Analyses Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# Matrix Spike/Matrix Spike Duplicate Analyses

Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on Sample OBS-95-11. The percent recovery (%R) values of 70.9% and 63.8%% were less than the lower control limit of 75%. Antimony results in the associated samples were qualified as estimated (UJ-8).

## Overall Assessment

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the MS/MSD analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the laboratory control sample %R value being within control limits.

Qualification of sample results was required because of low MS/MSD %R values. CRIGINAL

All data, as qualified, are acceptable for use.

RUST E&I: Tooele North Data Assessment

AVYB-1

EcoChem, Inc.

# TIER I DATA QUALITY ASSESSMENT ANTIMONY ANALYSES: SOIL METHOD: SW-7041

LOT: AVYC

Analytical data for 18 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 28, 1995, and were analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration Blank Analyses

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample Analyses
 Laboratory Control Sample (LCS) Analyses
 Duplicate Sample Analyses (Laboratory and Field)
 Graphite Furnace QC Analyses
 Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## Matrix Spike/Matrix Spike Duplicate Analyses

Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on Sample OBS-95-11. The percent recovery (%R) values of 65.2% and 60.6%% were less than the lower control limit of 75%. Antimony results in the associated samples were qualified as estimated (UJ-8).

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the MS/MSD analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the laboratory control sample %R value being within control limits.

Qualification of sample results was required because of low MS/MSD %R values.

All data, as qualified, are acceptable for use.

RUST E&I: Tooele North Data Assessment

AVYC-1

EcoChem, Inc.

# TIER I DATA QUALITY ASSESSMENT SELENIUM ANALYSES: WATER METHOD: SD25 LOT: AVZD

Analytical data for four equipment blanks were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and National Functional

Guidelines (U.S. EPA, 1991). The samples were collected on November 28 and 29, 1995 and were analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration Blank Analyses

- \* Matrix Spike Sample Analyses
- Low spike and High Spike Analyses
- Duplicate Sample Analyses (Laboratory and Field)
   Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## Matrix Spike/Matrix Spike Duplicate Analyses

No matrix spike/matrix spike duplicate (MS/MSD) analyses were performed for this lot. No action was taken on this basis.

## Low Spike and High Spike Analyses

One low spike and two high spike analyses were performed with this sample lot. The low/high spike percent recovery (%R) values were evaluated based on the control chart upper and lower limits. The low spike %R value of 79% was less than the lower control limit of 81.5%. As this low spike %R value was also less than the *National Functional Guidelines* control limits, all selenium results were qualified as estimated (UJ-10). The high spike %R values of 82.1% and 90.3% were within the control limits. The relative percent difference (RPD) value of 9.5% for high spike analyses was greater than the control limit of 8.2%. As this RPD value was less than the *National Functional Guidelines* control limit of 20%, no action was taken.



### **Duplicate Sample Analyses**

No laboratory and field duplicate analyses were performed for this lot. No action was taken on this basis.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the RPD values of the high spike analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the high spike %R values being within control limits.

Qualification of sample results was required because of a low spike %R value.

All data, as qualified, are acceptable for use.

# TIER I DATA QUALITY ASSESSMENT

SELENIUM ANALYSES: SOIL METHOD: JD20 LOT: AVXY

Analytical data for 33 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 27 and 28, 1995 and were analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration Blank Analyses

- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses
   Low spike and High Spike Analyses
- \* Duplicate Sample Analyses (Laboratory and Field)
- \* Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# Matrix Spike/Matrix Spike Duplicate Analyses

The laboratory performed matrix spike/matrix spike duplicate (MS/MSD) analyses on Sample SAS-95-11. The MS and MSD percent recovery (%R) values of 51.0% and 48.2% were less than the lower control limit of 75%. Selenium results in the associated samples were qualified as estimated (UJ-8/J-8). The relative percent difference (RPD) value of 5.6% was within the control limit.

## **Duplicate Sample Analyses**

No laboratory duplicate analyses were performed for this lot. No action was taken on this basis.

## **Certified Reporting Limits**

In raw data, the selenium result in Sample SAS-95-11 was greater than the reporting limit of  $0.459 \,\mu\text{g/g}$  at  $0.493 \,\mu\text{g/g}$ . However, the laboratory reported this result as not detected in the transfer files. The laboratory was contacted, and resubmitted the transfer files and the sample

results summary page for the data package, showing the corrected value. No further action was taken.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the QC criteria-compliant RPD values of the high spike and MS/MSD analyses. Accuracy was acceptable, as demonstrated by the low and high spike %R values being within control limits.

Qualification of sample results was required because of low MS/MSD %R values.

All data, as qualified, are acceptable for use.

# TIER I DATA QUALITY ASSESSMENT THALLIUM ANALYSES: WATER METHOD: SW-7841

LOT: AVZF

Analytical data for three equipment blank samples and one field blank sample were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 28 and 29, 1995, and were analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
Instrument Calibration
Blank Analyses
Matrix Spike Sample Analyses
Low Spike and High Spike Analyses
Duplicate Sample Analyses (Laboratory and Field)
Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the QC criteria-compliant relative percent difference (RPD) values of the laboratory duplicate, high spike and matrix spike/matrix spike duplicate (MS/MSD) analyses. Accuracy was acceptable, as demonstrated by the low spike and high spike percent recovery (%R) and MS/MSD %R values being within control limits.

All data, as reported, are acceptable for use.





# QUALITY CONTROL REPORT

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Page 1

G960G029

AVZE

Method...: IT-SW-7841 Analyte...: THALLIUM

Matrix....: WATER

Date Printed....: 16-JAN-1996 18:34

Group Name....: G960G029

Analyst.... Units..... ug/IJ (1/7/96

QC Limit Type...: Full

Blank Results

Sample ID Sample Name BL-104732-1

QC Date 28-DEC-1995

Blank -0.299

LCS Results

Sample ID Sample Name S95CLOCD QC-104732-1

QC Date 28-DEC-1995

LCS Result 44.6/ Amount Percent Spiked Recovery 50.0 89.1

Matrix Spike Results

Sample ID Sample Name S95CLOCF UC 04285MS 3ER-67

QC Date 28-DEC-1995 Sample Result 0.0500

MS Result 22.9 22.89

Amount Percent Spiked Recovery 25.0 91.6

Matrix Spike Duplicate Results

Sample ID Sample Name S95CLOCG

QC Date UC 04285MSD 28-DEC-1995 3ER-67

MSD Result 23.2 23.15

Percent Relative % Difference Recovery

fatrix Duplicate Results

3ER-68

sample ID Sample Name 95CL0CH UC 04286MD

QC Date 28-DEC-1995

Sample Result 0.0100 ND

MD Result 0.0700 ND

Relative 5 150. NC

N

# TIER I DATA QUALITY ASSESSMENT THALLIUM ANALYSES: SOIL METHOD: SW-7841

LOT: AVXZ

Analytical data for 15 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 27, 1995, and were analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
Instrument Calibration
Blank Analyses
Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample Analyses
Laboratory Control Sample (LCS) Analyses
Duplicate Sample Analyses (Laboratory and Field)
Graphite Furnace QC Analyses
Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# **Duplicate Sample Analyses**

No field duplicate samples were submitted for this Lot. No action was taken on this basis.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the QC criteria-compliant relative percent difference (RPD) values of the matrix spike/matrix spike duplicate (MS/MSD) analyses. Accuracy was acceptable, as demonstrated by the laboratory control sample and MS/MSD percent recovery (%R) values being within control limits.

All data, as reported, are acceptable for use.





#### QUALITY CONTROL REPORT

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Page 1



AVXZ

Method...: IT-SW-7841

Analyte ...: THALLIUM

Matrix....:SOIL

Date Printed....: 12-JAM-1996 15:19

Group Name.....: G960B023

Units..... ug/g

QC Limit Type...: Full

Blank Results

Sample ID Sample Name S95CH084 BL-104716-1

QC Date 21-DEC-1995

Blank Result 0.0440/0,044

LCS Results

Sample ID Sample Name QC-104716-1

QC Date 21-DEC-1995

LCS Result/ Spiked 37.5 39.0 37.4)

Percent Recovery/ 96.0 96.03

Matrix Spike Results

Sample ID Sample Name
S95CH086 UC 04228MS

QC Date 21-DEC-1995 Sample Result/ MS 2.18 0.253 2.184 0.153

Amount Result/ Spiked 2.50

Percent Recovery 87.4 87.46

Matrix Spike Duplicate Results

Sample ID Sample Name S95CH087 UC 04228MSD

QC Date 21-DEC-1995 2.39 2.388

MSD Percent Relative \* Result Recovery Difference 8.92 95.5 95.52

Matrix Duplicate Results

Sample ID Sample Name
UC 04229MD

QC Date 21-DEC-1995 Sample Result 0.0970 0,997

NO

MD Result 0.0530 0.053

ND

Relative % Difference -58-7 Ne

# TIER I DATA QUALITY ASSESSMENT THALLIUM ANALYSES: SOIL METHOD: SW-7841

LOT: AVYA

Analytical data for 18 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 28, 1995, and were analyzed by DataChem.

#### TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

Technical Holding Times
Instrument Calibration
Blank Analyses
Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample Analyses

Laboratory Control Sample (LCS) Analyses
 Duplicate Sample Analyses (Laboratory and Field)
 Graphite Furnace QC Analyses
 Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## **Laboratory Control Sample Analyses**

One laboratory control sample (LCS) analysis was performed with this sample lot. The percent recovery (%R) value of 63.8% was less than the lower control limit of 80%. Thallium results in this lot were qualified as estimated (UJ-10).

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the matrix spike/matrix spike duplicate (MS/MSD) analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the MS/MSD %R values being within control limits.

Qualification of sample results was required because of a low LCS %R value.

All data, as qualified, are acceptable for use.





#### QUALITY CONTROL REPORT

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Page 1

AVYA

Method...: IT-SW-7841 Analyte ...: THALLIUM

Matrix...:SOIL

Date Printed....: 16-JAN-1996 18:35

Group Name....: **G960G02C** 

Analyst..... 4/64 1/17/56 Units..... ug/g

QC Limit Type...: Full

Blank Results

Blank Sample ID Sample Name QC Date Result S95CH089 BL-104723-1 21-DEC-1995 -0.00300

LCS Results

80-120% LCS Amount Sample ID Sample Name QC Date Result Recover Spiked 63.85 S95CH08B QC-104723-1 21-DEC-1995 63.8/ 24.9 39.0 24.89

Matrix Spike Results

Sample Result MS Amount Percent Sample ID Sample Name Spiked Recovery QC Date Result S95BW11C UC 04254MS 2.37 21-DEC-1995 0.190 2.50 94.8 0,19 2-371 8AS-95-11

Matrix Spike Duplicate Results

Relative % Difference MSD Percent Sample ID Sample Name QC Date Result Recovery UC 04254MSD 21-DEC-1995 S95BW11D 2.37 94.6 0.253 2.365 SAS-95-11

Matrix Duplicate Results

MD Sample Result Relative % QC Date Sample ID Sample Name Result Difference S95CH08C UC 04260MD 21-DEC-1995 0.175 0.117 -39:7 NC ND SNB-95-113 NP

# TIER I DATA QUALITY ASSESSMENT MERCURY ANALYSES: WATER METHOD: CC8

LOT: AVUQ

Analytical data for four equipment blanks were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 28 and 29, 1995 and were analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration Blank Analyses

- Matrix Spike Sample Analyses
   Low Spike and High Spike Analyses
- Duplicate Sample Analyses (Laboratory and Field)
   Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## Matrix Spike/Matrix Spike Duplicate Analyses

No matrix spike/matrix spike duplicate (MS/MSD) analyses were performed for this lot. No action was taken on this basis.

## **Duplicate Sample Analyses**

No laboratory and field duplicate analyses were performed for this lot. No action was taken on this basis.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the high spike analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the low and high spike percent recovery (%R) values being within control limits. All data, as reported, are acceptable for use.

RUST E&I: Tooele North Data Assessment KK 02/07/98 10:04 AM L:089-RUST\TOOELE:C08909.020\TIER1\AVUQ\_T1.HG

AVUQ-1

EcoChem, Inc.

# TIER I DATA QUALITY ASSESSMENT MERCURY ANALYSES: SOIL METHOD: Y9

LOT: AVYQ

Analytical data for 33 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 27 and 28, 1995, and were analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
Instrument Calibration
Blank Analyses
Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

- \* Low Spike and High Spike Analyses
- Duplicate Sample Analyses (Laboratory and Field)
   Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## Low Spike and High Spike Analyses

One low spike and two high spike analyses were performed with this sample lot. The low/high spike percent recovery (%R) values were evaluated based on the control chart upper and lower limits. The low spike %R value of 157.0% was greater than the upper control limit of 135%. All positive mercury results in the associated samples were qualified as estimated (J-10). The high spike %R values of 111.8% and 106% were within the control limits.

## **Duplicate Sample Analyses**

No laboratory duplicate analyses were performed for this lot. No action was taken on this basis.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the high spike and matrix spike/matrix spike duplicate (MS/MSD) analyses being within QC criteria.

RUST E&I: Tooele North Data Assessment

Accuracy was acceptable, as demonstrated by the high spike and MS/MSD %R values being within control limits.

Qualification of sample results was required because of a high spike %R value.

All data, as qualified, are acceptable for use.



#### Case Narrative

Method: Y9

Analysis: Mercury

Preparation SOP #: Y9, Rev. 3 (0) Analysis SOP #: Y9, Rev. 3 (0)

Lot: AVYO

DCL Set ID: U95-0640-33 & U95-0641-33

Client: RUST E & I

Account: 3224
Matrix: Soil

General Set Information: There are thirty three field samples in these sets. The samples were analyzed for mercury in soil.

Method Summary: A representative 0.20 g (± 0.002 g) wet weight portion of sample is treated in a BOD with sulfuric and nitric acid. The sample is then heated for two minutes on a steam bath. After heating, the sample is cooled and ASTM Type II water, potassium permanganate, and potassium persulfate are added. The sample is heated for 30 minutes. After heating, the sample is cooled and ASTM Type II water is again added. Hydroxylamine hydrochloride is added to the sample, and an aliquot of the prepared sample is poured into a sample cup and loaded into the CVAA autosampler. The automated introduction system of the instrument injects a reproducible volume of standard or sample from the sample cups into an HCl carrier stream. Stannous chloride is then added to the sample in the sample stream; and the resulting Hg vapor is separated from the liquid by a gas/liquid separator. The resulting vapor is transported into the analytical cell for determination of Hg content.

Sample Preparation: All samples were prepared in accordance with published procedures.

Holding Times: The holding times were met for both preparation and analysis.

Instrument Calibration: Instrument calibration was performed in accordance with published procedures.

<u>Calibration Check Standards</u>: Recoveries of the analyte in all calibration check standards are within quality control limits.

<u>Calibration Check Blanks:</u> No method analyte was found in any calibration check blank sample at levels above detection limits.

Dilutions: None are reported for this lot.

OC Sample Analysis: QC samples were prepared and analyzed according to the method. Recovery data were submitted and approved according to the USAEC QC plan.

Matrix Spike Analysis: A matrix spike was prepared from samples UC 04254 and analyzed with this lot. Recovery of the spiked analyte in the matrix spike is within the quality control limits of  $\pm 25\%$ .

Matrix Spike Duplicate Analysis: A matrix spike duplicate was also prepared from the same samples as the matrix spike. The relative percent difference between the matrix spike and the matrix spike duplicate is within the quality control limit of 20%.

Flagging Codes: Samples flagged with a "D" are duplicates.

NC/CAR and CPR: None are reported for this lot.

Sample Calculation: The final results are calculated in  $\mu g/g$  by the equation (A) x (B) where

A = Analyte concentration from instrument determination (μg/g)

B = Dilution performed at time of analysis

e.g. UC 04240:  $(0.016 \mu g/g) \times (1) = 0.016 \mu g/g$ 

Miscellaneous Comments: None.

Thi Tang Date

AWKZ 08S-95-02 004 UC04262 SOIL 8290 78HXDF 0.00000228 JPB U-7 UGG AWKZ 08S-95-03 005 UC04263 SOIL 8290 G78HPD 0.00000266 B U-7 UGG AWKZ 08S-95-03 005 UC04263 SOIL 8290 G78HPD 0.00000366 B U-7 UGG AWKZ 08S-95-03 005 UC04263 SOIL 8290 G78HPD 0.00000366 B U-7 UGG AWKZ 08S-95-03 005 UC04263 SOIL 8290 G78HPD 0.00000366 B U-7 UGG AWKZ 08S-95-03 005 UC04263 SOIL 8290 G78HPD 0.00000366 B U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 G78HPD 0.00000311 B U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 G78HPD 0.00000311 B U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 G78HPP 0.00000226 B U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 G78HPP 0.00000226 B U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 CDD 0.0000337 JPB U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 CDD 0.00000387 JPB U-7 UGG AWKZ 08S-95-05 009 UC04265 SOIL 8290 G78HPF 0.00000248 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 G78HPF 0.00000048 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 G78HPF 0.00000046 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 G78HPF 0.000000952 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 G78HPF 0.000000952 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 GCDD 0.0000046 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 GCDD 0.0000046 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 GCDD 0.0000046 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 GCDD 0.0000046 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 GCDD 0.00000099 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 GCDD 0.00000099 JPB U-7 UGG AWKZ 08S-95-06 010 UC04268 SOIL 8290 GCDD 0.0000000000000000000000000000000000	8909-1	<u>,                                      </u>			<del></del>			,		
AWHS 0BP-95-01C 003 UC04172 SOIL 8290 234PCF LT 0.000000980 UL1-19 UGG AWHS 0BP-95-01C 003 UC04172 SOIL 8290 78PCDF LT 0.000009800 UL1-19 UGG AWHS 0BP-95-01C 003 UC04172 SOIL 8290 TCDD LT 0.00000131 UL1-19 UGG AWHS 0BP-95-01C 003 UC04172 SOIL 8290 TCDD LT 0.00000131 UL1-19 UGG AWHS 0BP-95-01C 003 UC04172 SOIL 8290 TCDD LT 0.00000131 UL1-19 UGG AWHS 0BP-95-01C 003 UC04175 SOIL 8290 TCDF LT 0.00000131 UL1-19 UGG AWHS 0BP-95-01D 007 UC04176 SOIL 8290 F78HPF 0.00000210 JP U-7 UGG AWHS 0BP-95-01D 007 UC04178 SOIL 8290 F78HPF 0.00000210 JP U-7 UGG AWHS 0BP-95-02A 004 UC04173 SOIL 8290 F78HPF 0.00000230 JP U-7 UGG AWHS 0BP-95-02A 004 UC04173 SOIL 8290 F78HPF 0.00000230 JP U-7 UGG AWHS 0BP-95-02D 003 UC04261 SOIL 8290 F78HPF 0.00000235 JB U-7 UGG AWKC 0BS-95-01 003 UC04261 SOIL 8290 F78HPF 0.00000255 JB U-7 UGG AWKC 0BS-95-01 003 UC04262 SOIL 8290 F78HPF 0.00000676 JB U-7 UGG AWKC 0BS-95-02 004 UC04262 SOIL 8290 F78HPF 0.00000676 JB U-7 UGG AWKC 0BS-95-02 004 UC04262 SOIL 8290 F78HPF 0.00000676 JB U-7 UGG AWKC 0BS-95-02 004 UC04262 SOIL 8290 F78HPF 0.00000678 JB U-7 UGG AWKC 0BS-95-02 004 UC04262 SOIL 8290 F78HPF 0.00000678 JB U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 F78HPF 0.00000678 JB U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 F78HPP 0.00000678 JB U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 F78HPP 0.00000346 JB U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 F78HPP 0.00000346 JB U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 F78HPP 0.00000367 JB U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 F78HPP 0.00000367 JB U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 F78HPP 0.00000367 JB U-7 UGG AWKC 0BS-95-04 006 UC04264 SOIL 8290 F78HPP 0.00000367 JB U-7 UGG AWKC 0BS-95-04 006 UC04264 SOIL 8290 F78HPP 0.00000067 JPB U-7 UGG AWKC 0BS-95-05 009 UC04265 SOIL 8290 F78HPP 0.00000067 JPB U-7 UGG AWKC 0BS-95-06 010 UC04266 SOIL 8290 F78HPP 0.00000067 JPB U-7 UGG AWKC 0BS-95-06 010 UC04266 SOIL 8290 F78HPP 0.00000067 JPB U-7 UGG AWKC 0BS-95-06 010 UC04266 SOIL 8290 F78HPP 0.00000067 JPB U-7 UGG AWKC 0BS-95-06 010 UC04266 SOIL 8290 F	<u> </u>		Lab ID	Matrix	Method	Analyte	Conc.			Units
AWHS    OBP-95-01C   O03 UC04172   SOIL   8290   78PCDF   LT 0.000000900   UL-19   UGG			038 UC04344	SOIL	8290	78HXDF	0.00000603	ВВ	U-7	UGG
AWHS  OBP-95-01C				SOIL	8290	234PCF	LT 0.000000980		UJ-19	UGG
AWHS 0BP-95-01C 003 UC04172 SOIL 8290 TCDF LT 0.00000133 UJL-19 UGG AWHS 0BP-95-01D 007 UC04176 SOIL 8290 678HPF 0.00000210 JP U-7 UGG AWHS 0BP-95-02A 004 UC04173 SOIL 8290 678HPF 0.00000210 JP U-7 UGG AWHS 0BP-95-02C 010 UC04179 SOIL 8290 678HPF 0.000002210 JP U-7 UGG AWHS 0BP-95-03C 010 UC04179 SOIL 8290 678HPF 0.00000239 JP U-7 UGG AWKZ 0BS-95-01 003 UC04261 SOIL 8290 678HPF 0.00000239 JP U-7 UGG AWKZ 0BS-95-01 003 UC04261 SOIL 8290 678HPF 0.00000325 JB U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 0CDD 0.00000679 JB U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 678HPF 0.00000679 JB U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 78HXDF 0.00000718 JPB U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 0CDD 0.00000679 JB U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 0CDD 0.00000679 JB U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 0CDD 0.00000679 JB U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 0CDD 0.00000679 JB U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 0CDD 0.00000679 JB U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 0CDD 0.00000687 JB U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 0CDD 0.00000687 JB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 678HPF 0.00000687 JB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 678HPF 0.00000687 JB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 678HPF 0.00000687 JB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 678HPF 0.00000687 JB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 678HPF 0.00000687 JPB U-7 UGG AWKZ 0BS-95-05 009 UC04265 SOIL 8290 TCDF 0.00000687 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 TCDF 0.00000688 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 TCDF 0.00000689 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 TCDF 0.00000689 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 TCDF 0.00000689 JPB U-7 UGG AWKZ 0BS-95-08 010 UC04268 SOIL 8290 TCDF 0.00000689 JPB U-7 UGG AWKZ 0BS-95-08 010 UC04268 SOIL 8290 TCDF 0.00000699 JPB U-7 UGG AWKZ 0BS-95-08 010 UC04268 SOIL 8290 TCDF 0.00000699 JPB U-7 UGG AWKZ 0BS-95-08 010 UC04268 SOIL 8290 TCDF 0.00000699 JPB U-7 UGG AWKZ 0BS-95-08 0				SOIL	8290	78PCDF	LT 0.000000900		UJ-19	UGG
AWHS 0BP-95-01D 007 UC04176 SOIL 8290 678HPF 0.00000131 DJP U-7 UGG AWHS 0BP-95-02A 004 UC04173 SOIL 8290 678HPF 0.00000210 JP U-7 UGG AWHS 0BP-95-03C 010 UC04179 SOIL 8290 678HPF 0.00000225 JP U-7 UGG AWHS 0BP-95-03C 010 UC04179 SOIL 8290 678HPF 0.00000255 JB U-7 UGG AWKC 0BS-95-01 003 UC04261 SOIL 8290 678HPF 0.00000255 JB U-7 UGG AWKC 0BS-95-02 004 UC04262 SOIL 8290 0CDD 0.00000325 JB U-7 UGG AWKC 0BS-95-02 004 UC04262 SOIL 8290 789HPF 0.000000325 JB U-7 UGG AWKC 0BS-95-02 004 UC04262 SOIL 8290 789HPF 0.00000078 JPB U-7 UGG AWKC 0BS-95-02 004 UC04262 SOIL 8290 789HPF 0.00000078 JPB U-7 UGG AWKC 0BS-95-02 004 UC04262 SOIL 8290 789HPF 0.00000078 JPB U-7 UGG AWKC 0BS-95-02 004 UC04262 SOIL 8290 789HPF 0.00000078 JPB U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 678HPF 0.00000028 JPB U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 678HPF 0.00000346 JPB U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 678HPF 0.00000346 JPD U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 678HPF 0.00000387 JPB U-7 UGG AWKC 0BS-95-03 005 UC04263 SOIL 8290 678HPF 0.00000387 JPB U-7 UGG AWKC 0BS-95-04 006 UC04264 SOIL 8290 678HPF 0.00000387 JPB U-7 UGG AWKC 0BS-95-04 006 UC04264 SOIL 8290 678HPF 0.00000387 JPB U-7 UGG AWKC 0BS-95-04 006 UC04264 SOIL 8290 678HPF 0.00000387 JPB U-7 UGG AWKC 0BS-95-04 006 UC04264 SOIL 8290 678HPF 0.00000037 JPB U-7 UGG AWKC 0BS-95-04 006 UC04264 SOIL 8290 FRHXPF 0.00000037 JPB U-7 UGG AWKC 0BS-95-04 006 UC04266 SOIL 8290 FRHXPF 0.000000387 JPB U-7 UGG AWKC 0BS-95-05 009 UC04265 SOIL 8290 FRHXPF 0.000000387 JPB U-7 UGG AWKC 0BS-95-06 010 UC04266 SOIL 8290 FRHXPF 0.000000387 JPB U-7 UGG AWKC 0BS-95-06 010 UC04266 SOIL 8290 FRHXPF 0.000000387 JPB U-7 UGG AWKC 0BS-95-06 010 UC04266 SOIL 8290 FRHXPF 0.000000387 JPB U-7 UGG AWKC 0BS-95-06 010 UC04266 SOIL 8290 FRHXPF 0.000000387 JPB U-7 UGG AWKC 0BS-95-06 010 UC04266 SOIL 8290 FRHXPF 0.000000387 JPB U-7 UGG AWKC 0BS-95-08 010 UC04268 SOIL 8290 FRHXPF 0.000000387 JPB U-7 UGG AWKC 0BS-95-08 010 UC04268 SOIL 8290 FRHXPF 0.000000387 JPB U-7 UGG AWKC 0BS-95-08 010 UC04268 SOI	ļ	<del></del>	003 UC04172	SOIL	8290	TCDD	LT 0.00000131		UJ-19	UGG
AWHS   OBP-95-02A   004 UC04173   SOIL   8290   678HPF   0.00000210   July   U-7   UGG   AWHS   OBP-95-03C   010 UC04179   SOIL   8290   678HPF   0.00000239   JP   U-7   UGG   AWHS   OBP-95-03C   010 UC04179   SOIL   8290   678HPF   0.00000235   B   U-7   UGG   AWKC   OBS-95-01   003 UC04261   SOIL   8290   678HPF   0.00000325   B   U-7   UGG   AWKC   OBS-95-02   004 UC04262   SOIL   8290   CDD   0.0000044   B   U-7   UGG   AWKC   OBS-95-02   004 UC04262   SOIL   8290   678HPF   0.00000679   B   U-7   UGG   AWKC   OBS-95-02   004 UC04262   SOIL   8290   678HPF   0.00000679   B   U-7   UGG   AWKC   OBS-95-02   004 UC04262   SOIL   8290   789HPF   0.00000679   B   U-7   UGG   AWKC   OBS-95-02   004 UC04262   SOIL   8290   OCDD   0.0000181   JPB   U-7   UGG   AWKC   OBS-95-03   005 UC04263   SOIL   8290   OCDD   0.0000185   B   U-7   UGG   AWKC   OBS-95-03   005 UC04263   SOIL   8290   G78HPF   0.00000686   B   U-7   UGG   AWKC   OBS-95-03   005 UC04263   SOIL   8290   G78HPF   0.00000686   B   U-7   UGG   AWKC   OBS-95-03   005 UC04263   SOIL   8290   G78HPF   0.00000686   B   U-7   UGG   AWKC   OBS-95-04   006 UC04264   SOIL   8290   G78HPF   0.00000686   B   U-7   UGG   AWKC   OBS-95-04   006 UC04264   SOIL   8290   G78HPF   0.00000687   B   U-7   UGG   AWKC   OBS-95-04   006 UC04264   SOIL   8290   G78HPF   0.00000687   B   U-7   UGG   AWKC   OBS-95-05   009 UC04264   SOIL   8290   G78HPF   0.00000687   B   U-7   UGG   AWKC   OBS-95-06   006 UC04264   SOIL   8290   G78HPF   0.00000687   PB   U-7   UGG   AWKC   OBS-95-06   009 UC04265   SOIL   8290   G78HPF   0.00000687   PB   U-7   UGG   AWKC   OBS-95-06   010 UC04266   SOIL   8290   G78HPF   0.00000682   PB   U-7   UGG   AWKC   OBS-95-06   010 UC04266   SOIL   8290   G78HPF   0.00000682   JPB   U-7   UGG   AWKC   OBS-95-06   010 UC04266   SOIL   8290   G78HPF   0.00000682   JPB   U-7   UGG   AWKC   OBS-95-08   010 UC04266   SOIL   8290   G78HPF   0.00000682   JPB   U-7   UGG   AWKC   OBS-95-08   010 UC04266   SOIL   8290   G78HPF   0.00000682   JPB   U-7   UG		<del> </del>	003 UC04172	SOIL	8290	TCDF	LT 0.00000133	3	UJ-19	UGG
AWHS   OBP-95-03C			007 UC04176	SOIL	8290	678HPF	0.00000131	DJP	U-7	UGG
AWKZ 0BS-95-01 003 UC04281 SOIL 8290 678HPF 0.00000282 B U-7 UGG AWKZ 0BS-95-02 004 UC04282 SOIL 8290 789HPF 0.00000781 JPB U-7 UGG AWKZ 0BS-95-02 004 UC04282 SOIL 8290 789HPF 0.00000781 JPB U-7 UGG AWKZ 0BS-95-02 004 UC04282 SOIL 8290 789HPF 0.00000781 JPB U-7 UGG AWKZ 0BS-95-02 004 UC04282 SOIL 8290 789HPF 0.00000781 JPB U-7 UGG AWKZ 0BS-95-02 004 UC04282 SOIL 8290 789HPF 0.00000781 JPB U-7 UGG AWKZ 0BS-95-03 005 UC04283 SOIL 8290 G78HPP 0.0000028 JPB U-7 UGG AWKZ 0BS-95-03 005 UC04283 SOIL 8290 G78HPP 0.00000386 B U-7 UGG AWKZ 0BS-95-03 005 UC04283 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-03 005 UC04283 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04284 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04284 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04284 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04284 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04284 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04284 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04284 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04286 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04286 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-05 009 UC04286 SOIL 8290 G78HPP 0.00000387 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04286 SOIL 8290 G78HPP 0.000000387 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04286 SOIL 8290 G78HPP 0.000000391 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04286 SOIL 8290 G78HPP 0.000000391 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04286 SOIL 8290 G78HPP 0.000000391 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04286 SOIL 8290 G78HPP 0.000000391 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04286 SOIL 8290 G78HPP 0.000000391 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04286 SOIL 8290 G78HPP 0.000000391 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04286 SOIL 8290 G78HPP 0.000000391 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04288 SOIL 8290 G78HPP 0.000000391 JPB U-7 UGG AWKZ 0BS-95-08 012 UC04288 SOIL 8290 G78HPP 0.000000391 JPB U-7 UGG AWKZ 0BS-95-08 012 UC04288 SOIL		<del></del>	004 UC04173	SOIL	8290	678HPF	0.00000210	JP	U-7	UGG
AWKZ 0BS-95-01 003 UC04261 SOIL 8290 CCDD 0.00000344 B U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 F78HPF 0.00000679 B U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 F78HPF 0.00000679 B U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 F78HXDF 0.00000118 JPB U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 F78HXDF 0.00000195 B U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 OCDD 0.0000195 B U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 F78HPD 0.00000388 B U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 F78HPD 0.00000388 B U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 OCDD 0.00000387 B U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 F78HPD 0.00000388 B U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HPD 0.00000381 B U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HPD 0.00000381 B U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HPP 0.00000266 B U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HPP 0.00000037 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HPP 0.000000387 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HPP 0.000000387 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HPP 0.000000387 JPB U-7 UGG AWKZ 0BS-95-06 006 UC04265 SOIL 8290 F78HPP 0.000000387 JPB U-7 UGG AWKZ 0BS-95-06 009 UC04265 SOIL 8290 F78HPP 0.000000387 JPB U-7 UGG AWKZ 0BS-95-06 009 UC04265 SOIL 8290 F78HPP 0.000000387 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 F78HPP 0.000000387 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 F78HPP 0.000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 F78HPP 0.000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 F78HPP 0.000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 F78HPP 0.000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 F78HPP 0.000000959 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 F78HPP 0.000000959 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04268 SOIL 8290 F78HPP 0.000000959 JPB U-7 UGG AWKZ 0BS-95-08 012 UC04268 SOIL 8290 F78HPP 0.000000059 JPB U-7 UGG AWKZ 0BS-95-08 012 UC04268 SOIL 8290 F78HPP 0.0000000000000000000000000000000000			010 UC04179	SOIL	8290	678HPF	0.00000239	JP	U-7	UGG
AWKZ 0BS-95-02 004 UC04262 SOIL 8290 789HPF 0.000007918 JPB U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 789HPF 0.000007918 JPB U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 789HPF 0.000007918 JPB U-7 UGG AWKZ 0BS-95-02 004 UC04262 SOIL 8290 OCDD 0.0000195 JB U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 OCDD 0.0000195 JB U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 OCDD 0.0000195 JB U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 OCDD 0.00000567 JB U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 OCDD 0.00000567 JB U-7 UGG AWKZ 0BS-95-03 005 UC04263 SOIL 8290 OCDD 0.00000567 JB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 OCDD 0.0000037 JB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HPD 0.0000037 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HPD 0.00000037 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HXDF 0.00000037 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HXDF 0.00000037 JPB U-7 UGG AWKZ 0BS-95-04 006 UC04264 SOIL 8290 F78HXDF 0.00000037 JPB U-7 UGG AWKZ 0BS-95-05 009 UC04265 SOIL 8290 F78HPF 0.000000037 JPB U-7 UGG AWKZ 0BS-95-06 009 UC04265 SOIL 8290 F78HPF 0.00000037 JPB U-7 UGG AWKZ 0BS-95-05 009 UC04265 SOIL 8290 F78HPF 0.0000000074 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 F78HPF 0.0000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 CODD 0.000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 OCDD 0.000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 OCDD 0.000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 OCDD 0.000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 OCDF 0.000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 OCDF 0.000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 OCDF 0.000000952 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04266 SOIL 8290 OCDF 0.000000957 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04268 SOIL 8290 OCDF 0.000000957 JPB U-7 UGG AWKZ 0BS-95-06 010 UC04268 SOIL 8290 OCDF 0.000000957 JPB U-7 UGG AWKZ 0BS-95-08 012 UC04268 SOIL 8290 OCDF 0.00000000000000000000000000000000000		OBS-95-01	003 UC04261	SOIL	8290	678HPF	0.00000325	В	U-7	UGG
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AWKZ 08S-95-02 004 UC04262 SOIL 8290 78HXDF 0.00000228 JPB U-7 UGG AWKZ 08S-95-02 004 UC04262 SOIL 8290 OCDD 0.0000195 B U-7 UGG AWKZ 08S-95-03 005 UC04263 SOIL 8290 678HPD 0.00000346 B U-7 UGG AWKZ 08S-95-03 005 UC04263 SOIL 8290 678HPF 0.00000587 B U-7 UGG AWKZ 08S-95-03 005 UC04263 SOIL 8290 OCDD 0.0000036 B U-7 UGG AWKZ 08S-95-03 005 UC04263 SOIL 8290 OCDD 0.0000066 B U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 678HPD 0.00000311 B U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 678HPF 0.00000266 B U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 678HPF 0.00000266 B U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 678HPF 0.00000268 B U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 678HPF 0.00000280 B U-7 UGG AWKZ 08S-95-04 006 UC04264 SOIL 8290 678HPF 0.00000280 B U-7 UGG AWKZ 08S-95-06 009 UC04265 SOIL 8290 678HPF 0.000000274 JPB U-7 UGG AWKZ 08S-95-06 009 UC04265 SOIL 8290 678HPF 0.000000274 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 TCDF 0.000000174 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 OCDD 0.00000291 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 OCDD 0.00000291 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 OCDF 0.000000174 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-06 010 UC04266 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-06 010 UC04268 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-06 010 UC04268 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-08 012 UC04268 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-08 012 UC04268 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-08 012 UC04268 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-08 012 UC04268 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-08 012 UC04268 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-08 012 UC04268 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-08 012 UC04268 SOIL 8290 OCDF 0.000000177 JPB U-7 UGG AWKZ 08S-95-09 013 UC04269 SOIL 8290 OCDF 0.000000187 JPB U-7 UGG	AWKZ	OBS-95-02	004 UC04262	SOIL	8290	789HPF	0.00000118	JPB	U-7	<del></del>
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AWKZ OBS-95-08 012 UC04268 SOIL 8290 TCDD LT 0.000000410 UJ-19 UGG AWKZ OBS-95-08 012 UC04268 SOIL 8290 TCDF 0.000000206 JPB UJ-7,19 UGG AWKZ OBS-95-09 013 UC04269 SOIL 8290 234HXF 0.000000209 JPB U-7 UGG AWKZ OBS-95-09 013 UC04269 SOIL 8290 678HPF 0.00000158 JPB U-7 UGG AWKZ OBS-95-09 013 UC04269 SOIL 8290 678HXF 0.000000154 JPB U-7 UGG AWKZ OBS-95-09 013 UC04269 SOIL 8290 OCDD 0.00000154 JPB U-7 UGG	AWKZ	OBS-95-08	012 UC04268	SOIL	8290	OCDF				
AWKZ         OBS-95-08         012 UC04268         SOIL         8290         TCDF         0.000000206         JPB         UJ-7,19         UGG           AWKZ         OBS-95-09         013 UC04269         SOIL         8290         234HXF         0.000000209         JPB         U-7         UGG           AWKZ         OBS-95-09         013 UC04269         SOIL         8290         678HPF         0.00000158         JPB         U-7         UGG           AWKZ         OBS-95-09         013 UC04269         SOIL         8290         678HXF         0.000000154         JPB         U-7         UGG           AWKZ         OBS-95-09         013 UC04269         SOIL         8290         OCDD         0.00000622         B         U-7         UGG	AWKZ	OBS-95-08	012 UC04268	SOIL	8290	TCDD	LT 0.000000410			
AWKZ         OBS-95-09         013 UC04269         SOIL         8290         234HXF         0.000000209         JPB         U-7         UGG           AWKZ         OBS-95-09         013 UC04269         SOIL         8290         678HPF         0.000000158         JPB         U-7         UGG           AWKZ         OBS-95-09         013 UC04269         SOIL         8290         678HXF         0.000000154         JPB         U-7         UGG           AWKZ         OBS-95-09         013 UC04269         SOIL         8290         OCDD         0.00000622         B         U-7         UGG	AWKZ	OBS-95-08	012 UC04268	SOIL	8290	TCDF	0.00000206			
AWKZ         OBS-95-09         013 UC04269         SOIL         8290         678HPF         0.00000158         JPB         U-7         UGG           AWKZ         OBS-95-09         013 UC04269         SOIL         8290         678HXF         0.000000154         JPB         U-7         UGG           AWKZ         OBS-95-09         013 UC04269         SOIL         8290         OCDD         0.00000622         B         U-7         UGG	AWKZ	OBS-95-09	013 UC04269	SOIL	8290	234HXF				
WKZ OBS-95-09 013 UC04269 SOIL 8290 678HXF 0.000000154 JPB U-7 UGG WKZ OBS-95-09 013 UC04269 SOIL 8290 OCDD 0.00000622 B U-7 UGG	AWKZ	OBS-95-09	013 UC04269	SOIL	8290	678HPF				
WKZ OBS-95-09 013 UC04269 SOIL 8290 OCDD 0.00000622 B U-7 UGG	AWKZ	OBS-95-09	013 UC04269	SOIL	8290	678HXF	<del>                                     </del>			
NAMEZ OPE OF OO AND LOCATED TO THE OPEN OPEN	AWKZ	OBS-95-09	013 UC04269	SOIL	8290	OCDD	<del> </del>			
	WKZ	OBS-95-09	013 UC04269	SOIL	8290	OCDF				UGG

Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AWKZ	OBS-95-10	014 UC04270	SOIL	8290	OCDD	0.0000688	В	U-7	UGG
AWKZ	OBS-95-10	014 UC04270	SOIL	8290	OCDF	0.00000428	JPB	U-7	UGG
AWKZ	OBS-95-10	014 UC04270	SOIL	8290	TCDF	0.000000169	JPB	U-7	UGG
AWKZ	OBS-95-11	015 UC04271	SOIL	8290	234HXF	0.000000276	JPB	U-7	UGG
AWKZ	OBS-95-11	015 UC04271	SOIL	8290	678HPF	0.00000241	JPB	U-7	UGG
AWKZ	OBS-95-11	015 UC04271	SOIL	8290	OCDD	0.00000789	В	U-7	UGG
AWKZ	OBS-95-11	015 UC04271	SOIL	8290	OCDF	0.00000582	В	U-7	UGG
AWKZ	OBS-95-11	015 UC04271	SOIL	8290	TCDF	0.000000233	JPB	U-7	UGG
AWKZ	OBS-95-12	017 UC04273	SOIL	8290	678HPF	0.00000546	В	U-7	UGG
AWKZ	OBS-95-12	017 UC04273	SOIL	8290	678HXF	0.00000301	JPB	U-7	UGG
AWKZ	OBS-95-12	017 UC04273	SOIL	8290	TCDF	0.000000279	JPB	U-7	UGG
AWKZ	OBS-95-13	018 UC04274	SOIL	8290	234HXF	0.000000616	JPB	U-7	UGG
AWKZ	OBS-95-13	018 UC04274	SOIL	8290	678HXF	0.00000573	JPB	U-7	UGG
AWKZ	OBS-95-15	020 UC04276	SOIL	8290	678HPF	0.00000121	JPB	U-7	UGG
AWKZ	OBS-95-15	020 UC04276	SOIL	8290	OCDF	0.00000305	JPB	U-7	UGG
AWKZ	OBS-95-15	020 UC04276	SOIL	8290	TCDF	0.00000171	JPB	U-7	UGG
AWKZ	OBS-95-16	021 UC04277	SOIL	8290	678HPF	0.0000289	В	U-7	UGG
AWKZ	OBS-95-16	021 UC04277	SOIL	8290	OCDF	0.00000582	В	U-7	UGG
AWKZ	OBS-95-16	021 UC04277	SOIL	8290	TCDF	0.00000346	JPB	U-7	UGG
AWKZ	OBS-95-18	023 UC04279	SOIL	8290	678HPF	0.00000419	В	U-7	UGG
AWKZ	OBS-95-20	025 UC04281	SOIL	8290	234HXF	0.000000473	JPB	U-7	UGG
AWKZ	OBS-95-20	025 UC04281	SOIL	8290	678HPF	0.00000198	JPB	U-7	UGG
AWKZ	OBS-95-20	025 UC04281	SOIL	8290	OCDF	0.00000353	JPB	U-7	UGG
AWKZ	OBS-95-21	029 UC04316	SOIL	8290	678HPD	0.00000750	В	U-7	UGG
AWKZ	OBS-95-21	029 UC04316	SOIL	8290	678HPF	0.0000189	В	U-7	UGG
AWKZ	OBS-95-21	029 UC04316	SOIL	8290	78HXDF	0.00000448	В	U-7	UGG
AWKZ	OBS-95-21	029 UC04316	SOIL	8290	OCDD	0.0000575	В	U-7	UGG
AWKZ	OBS-95-22	030 UC04317	SOIL	8290	78HXDF	0.0000654	В	U-7	UGG
AWKZ	OB\$-95-23	031 UC04318	SOIL	8290	678HPF	0.0000172	В	U-7	UGG
AWKZ	OBS-95-23	031 UC04318	SOIL	8290	78HXDF	0.0000409	В	U-7	UGG
AWKZ	OBS-95-24	032 UC04319	SOIL	8290	678HPD	0.00000332	В	U-7	UGG
AWKZ	OBS-95-24	032 UC04319	SOIL	8290	678HPF	0.00000546	В	U-7	UGG
WKZ	OBS-95-24	032 UC04319	SOIL	8290	78HXDF	0.00000193	JPB	U-7	UGG
WKZ	OBS-95-24	032 UC04319	SOIL	8290	OCDD	0.0000205	В	J-7	UGG
WKZ	OBS-95-25	033 UC04320	SOIL	8290	678HPD	0.00000493	В	J-7	UGG
WKZ	OBS-95-25	033 UC04320	SOIL	8290	678HPF	0.00000611	В	J-7	UGG
WKZ (	OBS-95-25	033 UC04320	SOIL	8290	789HPF	0.000000899	JPB I	J-7 I	UGG
WKZ (	OBS-95-25	033 UC04320	SOIL	8290	78HXDF	0.00000306	В	J-7 l	JGG
WKZ (	OBS-95-25	033 UC04320	SOIL	8290	OCDD	0.0000390	В	J-7 L	JGG

8909-10	) <del> </del>			- <del> </del>					
Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AWKZ	OBS-95-26	034 UC04321	SOIL	8290	78HXDF	0.0000108	В	U-7	UGG
AWKZ	OBS-95-27	035 UC04322	SOIL	8290	234HXF	LT 0.000000400		UJ-19	UGG
AWKZ	OBS-95-27	035 UC04322	SOIL	8290	678HPF	0.00000286	В	UJ-7,19	UGG
AWKZ	OBS-95-27	035 UC04322	SOIL	8290	678HXF	LT 0.000000280		UJ-19	UGG
AWKZ	OBS-95-27	035 UC04322	SOIL	8290	789HPF	LT 0.00000110		UJ-19	UGG
AWKZ	OBS-95-27	035 UC04322	SOIL	8290	789HXF	LT 0.000000570		UJ-19	UGG
AWKZ	OBS-95-27	035 UC04322	SOIL	8290	78HXDF	LT 0.000000410		UJ-19	UGG
AWKZ	OBS-95-27	035 UC04322	SOIL	8290	OCDD	0.0000206	В	UJ-7,19	UGG
AWKZ	OBS-95-27	035 UC04322	SOIL	8290	OCDF	0.00000935		J-19	UGG
AWKZ	OBS-95-28	036 UC04323	SOIL	8290	678HPF	0.0000110	В	U-7	UGG
AWKZ	OBS-95-28	036 UC04323	SOIL	8290	789HPF	0.00000249	JPB	U-7	UGG
AWKZ	OBS-95-28	036 UC04323	SOIL	8290	78HXDF	0.00000337	В	U-7	UGG
AWBP	OBS-95-29	005 UC04325	SOIL	JS12	CR	12.9		J-21	UGG
AWBQ	OBS-95-29	005 UC04325	SOIL	B9	AS	6.86		J-5B	UGG
AWBS	OBS-95-29	003 UC04325	SOIL	7841	TL	LT 1.00		UJ-10	UGG
AWBU	OBS-95-29	005 UC04325	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
AWBP	OBS-95-30	006 UC04327	SOIL	JS12	CR	19.7		J-21	UGG
AWBQ	OBS-95-30	006 UC04327	SOIL	B9	AS	4.58		J-5B	UGG
AWBS	OBS-95-30	007 UC04327	SOIL	7841	TL	LT 1.00		UJ-10	UGG
AWBU	OBS-95-30	006 UC04327	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
AWBP	OBS-95-31	007 UC04329	SOIL	JS12	CR	13.2		J-21	UGG
AWBQ	OBS-95-31	007 UC04329	SOIL	B9	AS	4.98		J-5B	UGG
AWBS	OBS-95-31	008 UC04329	SOIL	7841	TL	LT 1.00			UGG
AWBU	OBS-95-31	007 UC04329	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
AWBP	OBS-95-32	008 UC04332	SOIL	JS12	CR	8.89		J-21	UGG
AWBQ	OBS-95-32	008 UC04332	SOIL	B9	AS	4.54		J-5B	UGG
AWBS	OBS-95-32	009 UC04332	SOIL	7841	TL	LT 1.00			UGG
AWBU	OBS-95-32	008 UC04332	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
AWBP	OBS-95-33	009 UC04333	SOIL .	JS12	CR	19.5			UGG
AWBQ	OBS-95-33	009 UC04333	SOIL	B9	AS	8.75		J-5B	UGG
AWBS	OBS-95-33	010 UC04333	SOIL	7841	TL	LT 1.00		UJ-10	UGG
AWBU	OBS-95-33	009 UC04333	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
AWBP	OBS-95-34	010 UC04336	SOIL	JS12	CR	15.1		J-21	UGG
AWBQ	OBS-95-34	010 UC04336	SOIL	B9	AS	7.22	1,		UGG
AWBS	OBS-95-34	011 UC04336	SOIL	7841	TL	LT 1.00			JGG
AWBU	OBS-95-34	010 UC04336	SOIL	Y9	HG	LT 0.0500			JGG
AWKZ	OBS-95-35	016 UC04272	SOIL	8290	678HPF	0.00000513			JGG
AWKZ	OBS-95-36	026 UC04282	SOIL	8290	678HPF	0.00000181			JGG
AWKZ	OBS-95-36	026 UC04282	SOIL	8290	678HXF	0.00000196			JGG

Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AWKZ	OBS-95-36	026 UC04282	SOIL	8290	OCDF	0.00000380	DJPB	U-7	UGG
AWKZ	OBS-95-36	026 UC04282	SOIL	8290	TCDF	0.000000619	DJPB	U-7	UGG
AWKZ	OBS-95-37	037 UC04324	SOIL	8290	678HPF	0.00000791	DB	U-7	UGG
AWKZ	OBS-95-37	037 UC04324	SOIL	8290	789HPF	0.00000153	DJPB	U-7	UGG
AWBP	OBS-95-38	011 UC04337	SOIL	JS12	CR	17.7	D	J-21	UGG
AWBQ	OBS-95-38	011 UC04337	SOIL	B9	AS	6.27	D	J-5B	UGG
AWBS	OBS-95-38	012 UC04337	SOIL	7841	TL	LT 1.00	D	UJ-10	UGG
AWBU	OBS-95-38	011 UC04337	SOIL	Y9	HG	LT 0.0500	D	UJ-7	UGG
AWBP	OBS-95-39	014 UC04343	SOIL	JS12	CR	16.9		J-21	UGG
AWBQ	OBS-95-39	014 UC04343	SOIL	B9	AS	5.57		J-5B	UGG
AWBS	OBS-95-39	015 UC04343	SOIL	7841	TL	LT 1.00		UJ-10	UGG
AWBU	OBS-95-39	014 UC04343	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
AWBP	OBS-95-40	012 UC04339	SOIL	JS12	CR	19.1		J-21	UGG
AWBQ	OBS-95-40	012 UC04339	SOIL	B9	AS	6.00		J-5B	UGG
AWBS	OBS-95-40	013 UC04339	SOIL	7841	TL	LT 1.00		UJ-10	UGG
AWBU	OBS-95-40	012 UC04339	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG
AWBP	OBS-95-41	013 UC04341	SOIL	JS12	CR	17.1		J-21	UGG
AWBQ	OBS-95-41	013 UC04341	SOIL	B9	AS	5.90		J-5B	UGG
AWBS	OBS-95-41	014 UC04341	SOIL	7841	TL	LT 1.00		UJ-10	UGG
AWBU	OBS-95-41	013 UC04341	SOIL	Y9	HG	LT 0.0500		UJ-7	UGG

Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AVXY	SAB-95-01A	005 UC04228	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAB-95-01A	003 UC04228	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-01B	006 UC04229	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAB-95-01B	006 UC04229	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-02A	008 UC04231	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAB-95-02A	009 UC04231	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-02B	009 UC04232	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAB-95-02B	010 UC04232	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-03A	011 UC04234	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAB-95-03A	012 UC04234	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-03B	012 UC04235	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAB-95-03B	013 UC04235	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-04A	014 UC04237	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAB-95-04A	015 UC04237	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-04B	015 UC04238	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAB-95-04B	016 UC04238	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVYQ	SAB-95-04B	015 UC04238	SOIL	Y9	HG	0.0611		J-10	UGG
AVXY	SAB-95-05A	017 UC04240	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAB-95-05A	018 UC04240	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-05B	018 UC04241	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAB-95-05B	019 UC04241	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-06A	020 UC04243	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYA	SAB-95-06A	003 UC04243	SOIL	7841	TL	LT 1.00		UJ-10	UGG
AVYC	SAB-95-06A	003 UC04243	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-06B	021 UC04244	SOIL	JD20	SE	LT 0.449	1	UJ-8	UGG
AVYA	SAB-95-06B	004 UC04244	SOIL	7841	TL	LT 1.00	1	UJ-10	UGG
AVYC	SAB-95-06B	004 UC04244	SOIL	7041	SB	LT 1.00		JJ-8	UGG
AVXY	SAB-95-07A	026 UC04249	SOIL	JD20	SE	LT 0.449		JJ-8	UGG
	SAB-95-07A	009 UC04249	SOIL	7841	TL	LT 1.00	1	JJ-10	UGG
AVYC	SAB-95-07A	009 UC04249	SOIL	7041	SB	LT 1.00	T I	JJ-8	UGG
AVXY	SAB-95-07B	027 UC04250	SOIL	JD20	SE	LT 0.449	į	J <b>J-</b> 8	UGG
AVYA	SAB-95-07B	010 UC04250	SOIL	7841	TL	LT 1.00	ı	JJ-10 I	UGG
AVYC	SAB-95-07B	010 UC04250	SOIL	7041	SB	LT 1.00	l	JJ-8	UGG
	SAB-95-08A	029 UC04252	SOIL	JD20	SE	LT 0.449	l	JJ-8	JGG
AVYA	SAB-95-08A	012 UC04252	SOIL	7841	TL	LT 1.00	l	JJ-10 (	JGG
AVYC	SAB-95-08A	012 UC04252	SOIL	7041	SB	LT 1.00	l	JJ-8 I	JGG
AVXY :	SAB-95-08B	030 UC04253	SOIL	JD20	SE	LT 0.449			JGG
AVYA :	SAB-95-08B	013 UC04253	SOIL	7841	TL	LT 1.00	l		JGG
AVYC :	SAB-95-08B	013 UC04253	SOIL	7041	SB	LT 1.00	ı		JGG

Lot		Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AVYC	SAB-95-08B	030 UC04253	SOIL	Y9	HG	0.0824		J-10	UGG
AVXY	SAB-95-09A	034 UC04255	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYA		017 UC04255	SOIL	7841	TL	LT 1.00		UJ-10	UGG
AVYC	SAB-95-09A	017 UC04255	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-09B	035 UC04256	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYA	SAB-95-09B	018 UC04256	SOIL	7841	TL	LT 1.00		UJ-10	UGG
AVYC	SAB-95-09B	018 UC04256	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-10A	036 UC04257	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYA	SAB-95-10A	019 UC04257	SOIL	7841	TL	LT 1.00		UJ-10	UGG
AVYC	SAB-95-10A	019 UC04257	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-10B	037 UC04258	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYA	SAB-95-10B	020 UC04258	SOIL	7841	TL	LT 1.00		UJ-10	UGG
AVYC	SAB-95-10B	020 UC04258	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAB-95-11A	038 UC04259	SOIL	JD20	SE	LT 0.449	D	UJ-8	UGG
AVYA	SAB-95-11A	021 UC04259	SOIL	7841	TL	LT 1.00	D	UJ-10	UGG
AVYC	SAB-95-11A	021 UC04259	SOIL	7041	SB	LT 1.00	D	UJ-8	UGG
AVXY	SAB-95-11B	039 UC04260	SOIL	JD20	SE	LT 0.449	D	UJ-8	UGG
AVYA	SAB-95-11B	022 UC04260	SOIL	7841	TL	LT 1.00	D	UJ-10	UGG
AVYC	SAB-95-11B	022 UC04260	SOIL	7041	SB	LT 1.00	D	UJ-8	UGG
AVXY	SAS-95-01	007 UC04230	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAS-95-01	008 UC04230	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAS-95-02	010 UC04233	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAS-95-02	011 UC04233	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAS-95-03	013 UC04236	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAS-95-03	014 UC04236	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAS-95-04	016 UC04239	SOIL	JD20	SE	LT 0.449		UJ-8	UGG
AVYB	SAS-95-04	017 UC04239	SOIL	7041	SB	LT 1.00		UJ-8 l	JGG
AVXY	SAS-95-05	019 UC04242	SOIL	JD20	SE	LT 0.449	1	UJ-8	JGG
AVYB	SAS-95-05	020 UC04242	SOIL	7041	SB	LT 1.00	1	UJ-8	JGG
AVYQ	SAS-95-05	019 UC04242	SOIL	Y9	HG	0.0574		J-10 (	JGG
AVXY	SAS-95-06	022 UC04245	SOIL	JD20	SE	LT 0.449	1	JJ-8 L	JGG
AVYA	SAS-95-06	005 UC04245	SOIL	7841	TL	LT 1.00	ı	JJ-10 L	JGG
AVYC	SAS-95-06	005 UC04245	SOIL	7041	SB	LT 1.00	l	JJ-8 L	JGG
AVXY	SAS-95-07	023 UC04246	SOIL	JD20	SE	LT 0.449	Į.	JJ-8 L	JGG
	SAS-95-07	006 UC04246	SOIL	7841	TL	LT 1.00	l	JJ-10 L	JGG
AVYC	SAS-95-07	006 UC04246	SOIL	7041	SB	LT 1.00	l	JJ-8 L	JGG
AVYQ	SAS-95-07	023 UC04246	SOIL	Y9	HG	0.0565	J	l-10 L	JGG
AVXY	SAS-95-08	024 UC04247	SOIL	JD20	SE	LT 0.449	l	JJ-8 L	IGG
AVYA	SAS-95-08	007 UC04247	SOIL	7841	TL	LT 1.00	l	JJ-10 U	IGG

Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AVYC	SAS-95-08	007 UC04247	SOIL	7041	SB	LT 1.00		UJ-8	UGG
AVXY	SAS-95-09	025 UC04248	SOIL	JD20	SE	LT 0.449			UGG
AVYA	SAS-95-09	008 UC04248	SOIL	7841	TL	LT 1.00			UGG
AVYC	SAS-95-09	008 UC04248	SOIL	7041	SB	LT 1.00			UGG
AVYQ	SAS-95-09	025 UC04248	SOIL	Y9	HG	0.0519			UGG
AVXY	SAS-95-10	028 UC04251	SOIL	JD20	SE	LT 0.449			UGG
AVYA	SAS-95-10	011 UC04251	SOIL	7841	TL	LT 1.00			UGG
AVYC	SAS-95-10	011 UC04251	SOIL	7041	SB	LT 1.00			UGG
AVXY	SAS-95-11	031 UC04254	SOIL	JD20	SE	0.493			UGG
AVYA	SAS-95-11	014 UC04254	SOIL	7841	TL	LT 1.00			UGG
AVYC	SAS-95-11	014 UC04254	SOIL	7041	SB	LT 1.00			UGG

# DATA QUALIFIER SUMMARY TABLE FOR BACKGROUND AND FIELD BLANK SAMPLES

Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units	]
AVZD	3ER-67	005 UC04285	WATER	SD25	SE	LT 2.53		UJ-10	UGL	1
AVZD	3ER-68	006 UC04286	WATER	SD25	SE	LT 2.53		UJ-10	UGL	1
AVZD	3ER-69	007 UC04349	WATER	SD25	SE	LT 2.53		UJ-10	UGL	1
AVZD	3FB-P	008 UC04353	WATER	SD25	SE	LT 2.53		UJ-10	UGL	1
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	678HPD	0.00000655	В	U-7	UGG	†
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	678HPF	0.0000221	В	U-7	UGG	1
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	78HXDF	0.00000762	В	U-7	UGG	┪.
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	OCDD	0.0000301		U-7	UGG	†
AWKZ	BKS-95-07	040 UC04346	SOIL	8290	678HPF			U-7	UGG	1
AWKZ	BKS-95-07	040 UC04346	SOIL	8290	78HXDF	0.00000457		U-7	UGG	ł
AWKZ	BKS-95-08	041 UC04347	SOIL	8290	678HPD	0.00000352		U-7	UGG	t
AWKZ	BKS-95-08	041 UC04347	SOIL	8290	678HPF	0.00000511		U-7	UGG	1
AWKZ	BKS-95-08	041 UC04347	SOIL	8290	OCDD	0.0000266		U-7	UGG	1.
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	678HPD		В	U-7	UGG	١.
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	678HPF	0.00000333	В	U-7	UGG	
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	78HXDF	0.00000166			UGG	
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	OCDD	0.0000186			UGG	



Environmental Science and Chemistry

# APPENDIX B DATA QUALIFIER REASON CODES



# **DATA QUALIFICATION CODES**

1	Holding Time						
2	Sample Preservation						
3	Sample Custody						
4	Missing Deliverables						
5A	Calibration (initial)						
5B	Calibration (continuing)						
6	Field Blanks						
7	Laboratory Blanks						
8	Matrix Spike						
9	Precision (Matrix Spike Duplicate)						
10	Laboratory Control Sample						
11	Detection Limit						
12	Standards						
13	Surrogates						
14	Other						
15	Furnace QC						
16	ICP Serial Dilution						
17	Chemical Recoveries						
18	Trip Blanks						
19	Internal Standards						
20	Linear Range Exceeded						
21	Potential False Positives						



**Environmental Science and Chemistry** 

# **DATA QUALITY ASSESSMENT**

# TOOELE ARMY DEPOT—NORTH AREA DAAA15-90-D-0007, TASK 0003

# SWMU 13 TIRE DISPOSAL AREA

#### Prepared for:

RUST Environment and Infrastructure 743 Horizon Court, Suite 240 Grand Junction, Colorado 81506

#### Prepared by:

EcoChem, Inc. 801 Second Avenue, Suite 1401 Seattle, Washington 98104

EcoChem Project Number: 8901-30

December 20, 1994

**Approved for Release:** 

Mark T. Brindle Project Manager

EcoChem, Inc.

#### DATA QUALITY ASSESSMENT SUMMARY

#### Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on soil samples and associated laboratory quality control samples. Refer to the Sample Index for sample identifications.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Primary	Secondary
SWMU 13	VOC	ANRP	LM23 (SOIL)	Bruce Tiffany	Eric Strout
	SVOC	ANQQ	LM25 (SOIL)	Bruce Tiffany	Eric Strout

Data assessment was based on the QC criteria recommended in the above listed method; the Tooele Army Depot—North Area QC Plan; USEPA Functional Guidelines for Organic and Inorganic Data Review; and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

Copies of the qualified transfer files are included as Appendix A. Each lot report also contains a summary table of qualified results. Data Quality Assessment Worksheets, Communication, and Corrective Action Records have been placed in labeled envelopes with the original data packages.

#### **DATA VALIDATION QUALIFIER CODES**

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.
R	Unreliable result. Data should not be used. Analyte may or may not be present in the sample.

J Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality Assessment Report should be consulted for reason.

UJ Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report should be consulted for reason.

#### SWMU 13 Tire Disposal Area

#### Volatile Organics

One lot of volatile organic analyses of soil samples using Method LM23 was reviewed. Data were found to be acceptable for use without qualification.

#### Semivolatile Organic Compounds

One lot of semivolatile organic compound (SVOC) analyses of soil samples using Method LM25 was reviewed. Bis(2-ethylhexyl)phthalate and several unknowns were qualified due to blank contamination. Hexachloro cyclopentadiene results (all non-detects) were qualified as estimated due to decreased sensitivity during continuing calibration. Three PCB aroclors (PCB 1016, 1260, and 1262) and toxaphene were reported as less than the CRL ("LT") with no flag or qualifying code. Because they were not analyzed for in the samples, the results should be qualified as rejected.

All other SVOC are acceptable for use as reported.

# DATA QUALITY ASSESSMENT VOLATILE ORGANIC ANALYSES: SOIL

METHOD: LM23 LOT NO.: ANRP

#### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANRP was provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. Sample moisture data was provided on the transfer file, but moisture raw data logbook pages were not provided. Transfer files, coding forms, USAEC Control Chart Response and DataChem QA Status Reports were provided.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; proper units for numerical values were used; and all laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field Chain-of-Custody forms were present and complete for each sample in Lot ANRP. All forms were signed and dated. The field Chain-of-Custody forms indicated no problems with sample receipt conditions. All samples in Lot ANRP were analyzed.

Laboratory Chain-of-Custody forms were present and complete for each sample in Lot ANRP. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory Chain-of-Custody forms. The field ID and laboratory ID for Sample TDP-94-10A were tracked from the Chain-of-Custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QUALITY CONTROL

No field, equipment, or trip blanks were submitted with Lot ANRP. This lot did not contain any field duplicates.

#### IV. TECHNICAL ASSESSMENT

**1.0** Sample Holding Times: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

The extraction holding time criterion listed in Method LM23 for soil matrices is seven days from date of sampling to date of extraction. All samples in Lot ANRP were extracted eight days after sampling. Standard (USEPA) holding time for soils is 14 days; no qualification is recommended. The analytical holding time criterion listed in Method LM23 for soil matrices is 14 days from date of sampling. All analyses were performed within 14 days of sampling.

#### 2.0 GC/MS Instrument Performance Check: ACCEPTABLE/All criteria met.

Bromofluorobenzene (BFB) was analyzed at the beginning of each calibration sequence as required. All appropriate BFB data were provided and all results were within the specified control limits listed in the data package.

#### 3.0 Initial and Continuing Calibration: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

The initial calibration was performed at the proper frequency. Five standards were used, meeting USATHAMA PAM 11-41 criterion for Class 1A. Response factors and percent relative standard deviation (%RSD) values were calculated for several compounds (see Data Quality Assessment Worksheets). No transcription or calculation errors were noted. Two compounds (methyl ethyl ketone at 43% and methyl isobutyl ketone at 43%) had %RSD values above the 30% upper control limit. These compounds were not detected in any sample. The CRL were judged not significantly affected, and no action was taken.

Daily calibrations were run at the correct frequency (before and after sample analyses). All daily calibrations met the Method LM23 criteria. The calibrations had several percent difference (%D) values between daily and initial response factors above 25%. Compounds with outlying %D values are listed in the Data Quality Assessment Worksheets. There were no positive target compound results in any sample. The certified reporting limits (CRL) for non-detected compounds associated with a non-compliant %D values greater than 50% were judged as low biased, and would be estimated (UJ). However, all CRL were previously qualified as estimated due to extraction holding time criteria violations. No additional action was taken.

**4.0** Blank Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

The method blank was analyzed at the proper frequency (one for each lot). The blank was free of target analytes and unknowns above the CRL. Two compounds (methyl isobutyl ketone and 1,1,2,2,-tetrachloroethane) were detected at concentrations below the CRL. These compounds were not detected in any of the associated samples. No action was required.

**5.0** Surrogate Recovery: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Surrogate compound percent recovery values (%R) were reviewed by recalculation. See the Data Quality Assessment Worksheets for examples of surrogate calculations. The upper and lower surrogate percent recovery limits from the control charts in the DataChem QA Status Report are based upon a standard matrix (ASTM Type II water) surrogate quality control spike. There are no control charts for field sample (natural matrix) surrogate recovery. For data assessment purposes, the surrogate %R values were compared to the limits specified in the three day moving average percent recovery control charts in the DataChem QA Status Report, and the surrogate recovery limits specified in the EPA Contract Laboratory Program (CLP) 3/90 Statement Of Work (SOW). The CLP SOW does not specify recovery limits for two of the USATHAMA-specified surrogate compounds, methylene chloride-d2 and ethylbenzene-d10. For these compounds, a recovery limit of ±20% (80% to 120% recovery range) was used to assess the field sample results.

All surrogate recovery values were within the limits specified by the EPA CLP 3/90 SOW. For surrogate compounds not specified in the EPA CLP 3/90 SOW, all recovery values fell within the 80% to 120% acceptance range. All surrogates satisfied USAEC criteria.

# 6.0 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample Analyses: ACCEPTABLE/All criteria met.

All spiking compounds in the MS/MSD analyses satisfied EPA percent recovery (%R) and RPD criteria. No calculation or transcription errors were found.

7.0 Laboratory Control Sample (LCS): ACCEPTABLE/All criteria met.

Laboratory sample QC-39459-1 was analyzed with acceptable %R results.

#### 8.0 Internal Standards Performance: ACCEPTABLE/All criteria met.

Analysis of areas and retention times for internal standards was conducted (see Data Quality Assessment Worksheets). No quality control criteria for internal standards are specified in USATHAMA PAM 11-41 or the laboratory method. For data assessment purposes, the criteria from EPA National Functional Guidelines was used to assess the internal standards.

All internal standard areas were within the acceptance window of 50% to 200% of the continuing calibration internal standard area. All retention times were within ±30 seconds of the continuing calibration internal standard retention time.

#### 9.0 Compound Identification: ACCEPTABLE/All criteria met.

Target compounds were not detected in the samples. Compound identifications from the method blank and spiked analyses were reviewed and are acceptable.

# 10.0 Compound Quantitation and Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The quantitation of target analytes were reviewed by recalculation. See the Data Quality Assessment Worksheets for examples of compound quantitation. All compound quantitations were performed correctly. The certified reporting limits met those listed in Method LM23. No transcription errors were noted.

#### 11.0 Unknown Compounds: NONE REPORTED.

No unknown compounds were reported with the samples in this lot.

## 12.0 System Performance: ACCEPTABLE/All criteria met.

No signs of degraded instrument performance were observed. The analytical system was judged to have been in tune, within control, and stable during the course of these analyses.

#### V. OVERALL ASSESSMENT/QC SUMMARY

Based on this evaluation, the laboratory followed the specified analytical method.

Laboratory precision was acceptable according to MS/MSD RPD values. Accuracy was acceptable, as demonstrated by surrogate spike and MS recovery values.

The DataChem QA Status Report noted that downward trends were present for the recovery values of ethylbenzene-d10 and methylene chloride-d8. The laboratory and the USAEC Control Chart Response recommends that Lot ANRP be accepted. As all recovery values (for surrogate and spike compounds) were within the EPA and control chart acceptance limits, the above noted trends do not have any affect on the data.

The data, as qualified, are acceptable for use.

SEMIVOLATILE ORGANIC ANALYSES: SOIL

METHOD: LM25 LOT No.: ANQQ

#### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANQQ were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. Sample moisture data was provided on the transfer file, but moisture raw data logbook pages were not provided. Results for MS/MSD analyses have been included although they are not required by USATHAMA 11-41 for Class 1A analyses. Transfer files, DataChem QA Status Reports and USAEC Control Chart Response were provided. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: Changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; correction fluid or tape was not found on any of the raw data; proper units for numerical values were used; the laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in Lot ANQQ. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions. All samples listed on ANQQ chain-of-custody forms were analyzed.

Laboratory chain-of-custody forms were present and complete for each sample in Lot ANQQ. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field IDs and laboratory IDs for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. Field Quality Control

No field quality control samples (field replicates, field blanks, or trip blanks) were submitted with Lot ANQQ.

#### IV. TECHNICAL ASSESSMENT

#### 1.0 Sample Holding Times: ACCEPTABLE/All criteria met.

The extraction holding time criterion listed in Method LM25 for semivolatiles in a soil matrix is 14 days from date sampled to extraction date. The analytical holding time criterion listed in Method LM25 for soil matrices is 40 days from extraction date to date of analysis. All soil

samples were extracted within five days from the date of sampling, and analyzed within twelve days of the date of extraction.

#### 2.0 GC/MS Instrument Performance Check: ACCEPTABLE/All criteria met.

DFTPP was analyzed at the beginning of each twelve hour analytical sequence as required. All DFTPP data were provided, and all results were within the specified control limits.

3.0 Initial and Daily Calibration: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table

#### Discussion:

The initial calibration was performed at the proper frequency. Six standards were used, meeting USATHAMA PAM 11-41 criterion for Class 1A. Relative response factors (RRF) and percent relative standard deviation (%RSD) values were verified by recalculation. No calculation or transcription errors were noted. During data assessment, only positive results in the associated samples would be qualified on the basis of outlying curve linearity (indicated by %RSD values above 30%). All positive results were associated with acceptable compound curves. No action required.

Several compounds (heptachloroepoxide, chlordane and endosulfan II) had RRF values below the 0.05 lower control limit. These compounds are not consistently recoverable using GCMS methods, and historically have very low response factors. However, these compounds had acceptable %RSD values, indicating a stable response, and all RRF values were above 0.01. No action was taken.

Four compounds (PCB-1016, PCB-1260, PCB-1262, and toxaphene) were not included in the initial calibration, any daily calibration, and were not part of the list of compounds scanned for in any sample. These compounds were reported on the transfer files as LT (less than) values, with no laboratory flags. As these compounds were not scanned for (except as unknown compounds), the reporting limits (CRL) are rejected (R).

Continuing calibrations (CCAL) were run at the correct frequency (before and after sample analyses). All daily calibrations met the Method LM25 criteria. All of the CCAL had compounds with percent difference (%D) values greater than the ±25% control limits. A list of all %D outliers is in the Data Validation Worksheet. There were no positive results for any of these compounds in the samples. The detection limits (CRL) were judged not significantly affected, and no action was taken. All other %D values were acceptable.

**4.0** Blank Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table

### Discussion:

A method blank was analyzed at the required frequency. No target compounds were detected in the method blank. Several unknown compounds were detected. A list of all compounds detected in the method blank is in the Data Quality Assessment Worksheet. Action levels were established at ten times the concentration in the blank. Unknown compounds that were detected in the samples at concentrations less than the action levels were rejected (R). The unknown compounds were verified using the scan number, retention times, and a comparison of the mass spectra.

No field or equipment blanks were submitted with this lot.

**5.0** Surrogate Recovery: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Surrogate compound percent recoveries (%R) were reviewed by recalculation. See the Data Quality Assessment Worksheets for examples of surrogate calculations. The upper and lower surrogate percent recovery limits from the control charts in the DataChem QA Status Report are based upon a standard matrix (ASTM Type II water) surrogate quality control spike. There are no control charts for field sample (natural matrix) surrogate recovery. For data assessment purposes, the surrogate percent recoveries were compared to the limits specified in the three day moving average percent recovery control charts in the DataChem QA Status Report, and the surrogate recovery limits specified in the EPA Contract Laboratory Program (CLP) 3/90 Statement Of Work (SOW). The CLP SOW does not specify recovery limits for two of the USATHAMA-specified surrogate compounds, di-n-octyl phthalate-d4 and diethylphthalate-d4. For these compounds, a recovery range of 20% to 130% was used to assess the field sample results. The range is the same as the range recommended in the CLP SOW for new surrogate compounds.

One surrogate standard (di-n-octyl phthalate-d4) had percent recovery values above the 130% upper control limit (UCL) criterion in the blank and four samples. These samples also had high recoveries for diethyl phthalate-d4. Although these surrogate compounds are both part of the base-neutral fraction, these compounds are not discussed in the EPA CLP 3/90 SOW. The 130% upper control limit was established during the data quality assessment as a recommended control limit. As all other surrogates (both base-neutral and acid fractions) had percent recovery values within the specified EPA CLP 3/90 SOW control limits, no action was taken on the basis of the phthalate surrogate recovery outliers. For surrogate compounds not specified in the, all other recoveries fell within the 20% to 130% recovery range.

In the 13 field and QC sample analyses, 11 analyses each had from one to three percent recovery values outside the acceptance range specified in the DataChem QA Status Report control charts. The samples and the surrogate outliers are listed in the Data Quality Assessment Worksheet. As the surrogate percent recoveries met the CLP limits (except as noted above), and as the surrogate

recoveries were not significantly outside the control chart limits, no qualifiers were issued to the samples based on control chart surrogate percent recovery outliers.

### 6.0 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample Analyses:

ACCEPTABLE/With the following discussion.

Qualified Data: None.

### Discussion:

MS/MSD analyses were submitted with lot ANQQ. MS/MSD analyses were performed using Sample TDP-94-05B. The percent recovery values for 2,4-dinitrotoluene were 102% in the MS and 103% in the MSD, above the upper control limit of 89%. No action was taken. All other percent recovery (%R) values are within the control limits specified in the EPA CLP 3/90 SOW, indicating an acceptable degree of accuracy. All relative percent difference (RPD) values are eight percent or less, indicating an acceptable degree of precision.

#### 7.0 Field Duplicates: NOT SUBMITTED

Field duplicate samples were not submitted as part of Lot ANQQ.

#### 8.0 Internal Standards Performance: ACCEPTABLE/With the following discussion.

Qualified Data: None.

### Discussion:

Analysis of areas and retention times for internal standards was conducted (see Data Quality Assessment Worksheets). No quality control criteria for internal standards are specified in USATHAMA PAM 11-41 or the laboratory method. For data assessment purposes, the criteria from U.S. EPA National Functional Guidelines was used to assess the internal standards.

All internal standard areas were within the acceptance window of 50% to 200% of the continuing calibration internal standard area. All retention times were within ±30 seconds of the continuing calibration internal standard retention time.

#### 9.0 Compound Identification: ACCEPTABLE/All criteria met.

All compound identifications were reviewed and are found to be acceptable.

# 10.0 Compound Quantitation and Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

There were no positive results for any target compounds in the samples. Surrogate and matrix spiking compound quantitation were recalculated using the method described in the CLP SOW, with results similar to those reported by the laboratory. The compound quantitations were

judged to be acceptable. The reported CRL met those listed in Method LM25. No transcription errors were found.

11.0 Unknown Compounds: ACCEPTABLE/With the following qualification.

Qualified Data: See Section 4.0. All other unknown compounds were qualified JN.

#### Discussion:

Mass spectral library searches to identify unknown (non-target) compounds were performed as required, and all reported identifications were acceptable. As discussed in Section 4.0, unknown compounds in a sample that were also detected in the associated method blank were rejected (R). All other unknown compounds are qualified as estimated with tentative identification (JN).

**12.0** System Performance: ACCEPTABLE/All criteria met.

No signs of degraded instrument performance were observed. The analytical systems were judged to have been in tune, within control, and stable during the course of these analyses.

### 13.0 OVERALL ASSESSMENT/QC SUMMARY

Based on this evaluation, the laboratory followed the specified analytical method.

Accuracy is acceptable, as demonstrated by the %R values of surrogate and matrix spike recoveries. Precision is acceptable on the basis of MS/MSD RPD values.

The DataChem QC Status report notes the following trends were found in Lot ANQQ: terphenyl-d14 recoveries are trending below the mean, and 2-chlorophenol-d4, 2-fluorobiphenyl, 2-fluorophenol, diethyl phthalate-d4, nitrobenzene-d5 and phenol-d6 recoveries were going in a downward direction. The individual outlier listed was a low recovery for 2-fluorobiphenyl. One compound (1,3-dichlorobenzene-d4) was flagged as being above the range UCL, although the percent recovery was acceptable. The DataChem QA Status Report recommends that Lot ANQQ be accepted. The USAEC Control Chart Response letter accepts Lot ANQQ with no comments. The above noted trends and outliers have no significant impact upon the reported data.

Data qualifiers were assigned due to calibration outliers (compounds not included in the calibration) and blank contamination. Unknown (non-target) compounds that were not qualified due to blank contamination received a JN flag.

Data that are rejected are unusable for any purpose. All other data, as qualified, are acceptable for use.

# Qualified Data Summary Table Lot No: ANQQ

					B	Report Section
Analyte	Code	Qualifier	Sample ID	Concentration	Reason	
UNK530	UNK530	R	TDP-94-05B	0.8	< Action Level	4
UNK537	UNK537	R	TDP-94-05B	0.3	< Action Level	4
UNK643	UNK643	IR	TDP-94-05B	0.3	< Action Level	4
UNK530	UNK530	R	TDP-94-06A	1.0	< Action Level	4
UNK537	UNK537	R	TDP-94-06A	0.4	< Action Level	4
UNK643	UNK643	R	TDP-94-06A	1.0	< Action Level	4
UNK530	UNK530	R	TDP-94-06B	0.6	< Action Level	4
UNK537	UNK537	R	TDP-94-06B	0.3	< Action Level	4
UNK530	UNK530	R	TDP-94-07A	0.8	< Action Level	4
UNK537	UNK537	R	TDP-94-07A	0.8	< Action Level	4
UNK643	UNK643	R	TDP-94-07A	0.3	< Action Level	4
UNK530	UNK530	R	TDP-94-07B	0.6	< Action Level	4
UNK537	UNK537	R	TDP-94-07B	0.3	< Action Level	4
UNK643	UNK643	R	TDP-94-07B	0.5	< Action Level	4
UNK530	UNK530	R	TDP-94-03A	0.4	< Action Level	4
UNK537	UNK537	R	TDP-94-03A	0.4	< Action Level	4
UNK530	UNK530	R	TDP-94-03B	0.6	< Action Level	4
UNK537	UNK537	R	TDP-94-03B	0.5	< Action Level	4
UNK643	UNK643	R	TDP-94-03B	0.7	< Action Level	4
UNK530	UNK530	R	TDP-94-04A	0.5	< Action Level	4
UNK537	UNK537	R	TDP-94-04A	0.3	< Action Level	4
UNK530	UNK530	R	TDP-94-04B	0.5	< Action Level	4
UNK537	UNK537	R	TDP-94-04B	0.3	< Action Level	4
UNK643	UNK643	R	TDP-94-04B	0.5	< Action Level	4
UNK530	UNK530	R	TDP-94-05A	0.5	< Action Level	4
PCB 1016	PCB016	R	All Samples	CRL = 0.32	Analytes not scanned	3
PCB 1260	PCB260	R	All Samples	CRL = 0.79	Analytes not scanned	3
PCB 1262	PCB262	R	All Samples	CRL = 6.3	Analytes not scanned	3 3
Toxaphene	TXPHEN	R	All Samples	CRL = 12	Analytes not scanned	3



**Environmental Science and Chemistry** 

# **DATA QUALITY ASSESSMENT**

# TOOELE ARMY DEPOT—NORTH AREA DAAA15-90-D-0007, TASK 0003

# SWMU 22 Building 1303 Washout Pond

# Prepared for:

RUST Environment and Infrastructure 743 Horizon Court, Suite 240 Grand Junction, Colorado 81506

## Prepared by:

EcoChem, Inc. 801 Second Avenue, Suite 1401 Seattle, Washington 98104

EcoChem Project Number: 8901-30

December 20, 1994

Approved for Release:

Mark T. Brindle Project Manager

EcoChem, Inc.

# DATA QUALITY ASSESSMENT SUMMARY

## Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on soil samples and associated laboratory quality control samples. Refer to the Sample Index for sample identifications.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Primary	Secondary
SWMU 22	Cyanide	ANLG	KY15 (SOIL)	Jason Ai	W. Jaime Bruton
	ICP Metals	ANWJ	JS12 (SOIL)	Jason Ai	W. Jaime Bruton

Data assessment was based on the QC criteria recommended in the above listed method; the Tooele Army Depot—North Area QC Plan; USEPA Functional Guidelines for Organic and Inorganic Data Review; and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

Copies of the qualified transfer files are included as APPENDIX A. Each lot report also contains a summary table of qualified results. Data Quality Assessment Worksheets, Communication, and Corrective Action Records have been placed in labeled envelopes with the original data packages.

## **DATA VALIDATION QUALIFIER CODES**

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.
R	Unreliable result. Data should not be used. Analyte may or may not be present in the sample.

# DATA QUALITY ASSESSMENT CYANIDE ANALYSES: SOIL

METHOD: KY15 LOT NO.: ANLG

# I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANLG were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

# II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody (COC) forms for Lot ANLG were completed properly, and all samples listed in the COC forms were analyzed. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for Lot ANLG samples. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. A minimum of 10% of the field ID and laboratory ID were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

# III. FIELD QC SUMMARY

One set of field duplicate samples (BWS-94-09/BWS-94-18) was analyzed and reviewed. Cyanide was not detected in these two samples. The relative percent difference (RPD) value for this set of field duplicate samples was not calculable.

No field blank was submitted with Lot ANLG samples.

### IV. TECHNICAL ASSESSMENT

# 1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 14 days from date of collection to analysis.

### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

For the initial calibration, the minimum number of standards were used, which met the method criterion. The linearity requirement of  $r \ge to 0.995$  was met. The laboratory analyzed a continuing calibration standard every ten samples as required. All percent recovery (%R) values of initial and continuing calibration verifications were within the control limits of 90% to 110%.

# 3.0 Blank Analyses: ACCEPTABLE/All criteria met.

Calibration blanks (ICB and CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated sample results. Continuing calibration blanks were analyzed after each continuing calibration standard as required. Preparation blanks were prepared with each digestion batch as required. No target analytes were detected in the blanks at or above the reporting limits.

# **4.0** Matrix Spike/Matrix Spike Duplicate Sample Analyses: ACCEPTABLE/All criteria met.

One set of MS/MSD analyses was performed on Sample BWS-94-01. The %R values for cyanide were 100.6% and 98.7%, which were within the control limits of 75% to 125%. The RPD value for this MS/MSD set was 1.9%, which was within the control limit of 35%.

# **5.0 High Spike and Low Spike Analyses:** ACCEPTABLE/With the following discussion.

Qualified Data: None.

### Discussion

Two high spike and one low spike analyses were performed with each sample lot. The %R values of both high spike analyses were 101.1% and 103.0%, which were slightly greater than the control chart upper limit of 99.9%. Since these percent recovery values were within the control limits specified in the Functional Guidelines (2/94), no action was taken. The %R values of the low spike analysis was 94.8%, which was within the control chart limits of 68.8% to 106.2%.

# 6.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limits for cyanide were reviewed. All reporting limits matched the certified reporting limit listed in the laboratory SOP.

# 7.0 Calculations: ACCEPTABLE/All criteria met.

Cyanide was not detected in any of the samples. No transcription errors or calculation errors were noted in the sample result data.

# V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAES Chemistry Branch Response indicates that Lot ANLG is acceptable. The laboratory noted high spike recovery values above the control chart upper limit for cyanide. No qualification is recommended based on these observations.

All data, as reported, are acceptable for use.

# DATA QUALITY ASSESSMENT METALS-ICP ANALYSES: SOIL

METHOD: JS12 Lot No.: ANWJ

# I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANWJ were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final samples results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

# II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field chain-of-custody forms were present and complete for Lot ANWJ. All Lot ANWJ samples listed on the chain-of-custody were analyzed. Transcription errors were found in Samples BRB-94-12A, BRB-94-12B, and BRB-94-12C. These sample IDs were incorrectly reported as BRP-94-12A, BRP-94-12B, and BRP-94-12C. in the laboratory chain-of-custody, transfer file printout, and raw data. The laboratory was contacted and corrected forms have not yet been received from the laboratory. All other sample IDs were tracked from the field chain-of-custody to the transfer file printout and no errors were noted. Internal chain-of-custody forms clearly indicated the laboratory numbers and field sample IDs for each sample.

# III. FIELD QUALITY CONTROL

No field blanks or field duplicate samples were submitted with Lot ANWJ samples.

# IV. TECHNICAL ASSESSMENT

1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 180 days from date of collection to analysis.

2.0 Instrument Calibration: ACCEPTABLE/With the following discussion.

Qualified Data: None.

### Discussion:

Instrument calibration consisted of one blank and one standard. Instrument sensitivity could not be evaluated with the documentation provided. All calibration check standards were within ±10% of the true value with the exception of a percent recovery (%R) for thallium at 127.2%. Since the %R value was greater than the upper control limit of 110% and thallium was not detected in any of the samples, no action was recommended. Plus or minus two times the standard deviation control limits were not utilized because historic calibration check results were not provided.

The laboratory analyzed a continuing calibration verification (CCV) standard every ten samples as required. The %R of the CCV were within  $\pm 10%$  of the true value. Plus or minus two times the standard deviation control limits were not utilized because historic calibration verification results were not provided.

**4.0** Blank Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Calibration blanks (CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated samples. Continuing calibration blanks were analyzed after each continuing calibration as required. A preparation blank was prepared with each digestion batch as required. No CCB result was greater than the reporting limit or less than the negative reporting limit, and no PB result was greater than the reporting limit. Aluminum, barium, calcium, chromium, iron, potassium, magnesium, manganese, vanadium, and zinc were detected in one QC blank (BL-39714-1). Since this soil blank sample (from RMA soil, R3D-381) was unwashed soil, no qualifications were recommended.

5.0 Matrix Spike Sample Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table ANWJ-1.

#### Discussion:

MS/MSD analyses were performed on Samples OSP-94-05A and BRB-94-12A. The MS %R value for chromium in the first set of MS/MSD analyses was 74%, which was slightly less than the lower control limit of 75%. Since the MSD %R value and relative percent difference (RPD) values were within the control limits, no action was recommended. The antimony %R values in both MS/MSD analyses were 0%, which indicates antimony analyses by ICP method were questionable. Antimony was not detected in any of the samples leading to a possibility of false non-detects. The quantitation limits for antimony were rejected and not usable for any purposes. All other %R values and RPD values were within the control limits.

**6.0 High Spike and Low Spike Analyses:** ACCEPTABLE/With the following discussion.

Qualified Data: See Qualified Data Summary Table ANWJ-1.

#### Discussion:

One low spike and two high spike analyses were performed with this sample lot. Recovery values were evaluated based on the control chart upper and lower limits. The %R of low spike and high spike analyses were within the control limits, with the exception of those listed in the table below.

Analyte	Low Spike	Control Limit	1st High Spike	2nd High Spike	Control Limits
Beryllium	Acceptable	92.5% to 105.1%	99%	100%	94.2% to 98.8%
Cadmium	Acceptable	86.6% to 107.8%	98%	100%	92.4% to 97.2%
Cobalt	Acceptable	94.8% to 124.2%	Acceptable	103%	95.0% to 102.2%
Chromium	Acceptable	90.3% to 111.5%	101%	102%	96.6% to 100.4%
Copper	Acceptable	104.8% to 121.8%	Acceptable	101%	95.2% to 100.4%
Nickel	Acceptable	88.8% to 126.2%	Acceptable	101%	94.0% to 100.8%
Lead	Acceptable	88.9% to 116.9%	102%	104%	95.1% to 100.3%
Antimony	Acceptable	45.1% to 75.9%	Acceptable	87.8%	79.1% to 87.7%
Vanadium	42.0%	69.2% to 127.8%	Acceptable	Acceptable	92.8% to 101.4%
Zinc	76.7%	88.5% to 104.7%	Acceptable	Acceptable	93.7% to 100.3%

The vanadium low spike %R value was less than both the USAEC control limit and the control limit specified in Functional Guidelines (2/94). Vanadium results in field samples that were less than the high spike concentration (30  $\mu$ g/g) were considered biased low and were qualified as estimated. Since both vanadium high spike %R values were within the control limits, vanadium results greater than the high spike concentration were acceptable and no other qualifications are recommended.

All other spike recovery values were close to the USAEC control limits and still within the control limit specified in Functional Guidelines (2/94), no other qualifications are recommended.

# 7.0 Duplicate Sample Analyses: NOT APPLICABLE

Laboratory duplicate analyses were not performed with this sample lot.

# 8.0 ICP Interference Check Sample (ICS) Analyses: NOT PERFORMED

ICP interference check sample analyses were not performed with this sample lot.

# 9.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits matched the certified reporting limit listed in the laboratory SOP.

10.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

## V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAEC Chemistry Branch Response indicates that Lot ANWJ is partially acceptable. The laboratory noted high spike recovery values trending above the central line for cadmium and lead; high spike recovery values moving in a downward direction for chromium; low spike range trending above the central line for boron, beryllium, and lead; low spike recovery values trending below the central line for copper and molybdenum; low spike recovery values moving in an upward direction for cobalt, tin, tellurium and thallium; low spike recovery values moving in a downward direction for molybdenum, nickel, lead, vanadium and zinc; and low spike recovery values less than the control chart lower limits for vanadium and zinc.

Vanadium was flagged with a "7" by the laboratory indicating low spike recovery. All vanadium results that were less than the high spike concentration (30  $\mu$ g/g) should be considered biased low and qualified. The zinc low spike %R value was 76.7%, which was less than the control chart lower limit of 88.5%, but within the Functional Guidelines (2/94) control limits of 75% to 125%. No qualification was recommended. No other qualifications are recommended on these observations.

The data, as qualified, are acceptable for use.

# Qualified Data Summary Table Lot No: ANWJ

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
Antimony	SB	R	OSP-94-05A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OSP-94-05B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OSP-94-05C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OSP-94-06A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OSP-94-06B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OSP-94-06C		MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-01A	LT 19.6 ug/g LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	<del>                                     </del>			5
Antimony			BWB-94-01B	LT 19.6 ug/g	MS/MSD %R = 0%	
	SB	R	BWB-94-01C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony		R	BWB-94-02A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-02B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-02C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-03A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-03B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-03C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRB-94-12A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRB-94-12B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRB-94-12C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-03A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-03B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-03C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-09A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-09B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-07A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-07B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-07C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-01A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-01B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-01C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-13A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-13B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	Ŕ	BRP-94-13C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-02A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-02B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-02C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Vanadium	V	j	OSP-94-05A	21.7 ug/g	LS %R = 42.2%	6
Vanadium	V	J	OSP-94-05B	13.7 ug/g	LS %R = 42.2%	6
Vanadium	V	J	OSP-94-05C	10.6 ug/g	LS %R = 42.2%	6 .
Vanadium	V	J	OSP-94-06A	21.0 ug/g	LS %R = 42.2%	6
Vanadium	V	.J	OSP-94-06B	13.3 ug/g	LS %R = 42.2%	6
Vanadium	V	J	OSP-94-06C	16.8 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BWB-94-01A	10.6 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BWB-94-01B	15.3 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BWB-94-02A	10.9 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BWB-94-02B	7.33 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BWB-94-03A	<del></del>	LS %R = 42.2%	6
Vanadium	V	J	BWB-94-03B	20.4 ug/g	LS %R = 42.2%	6

# Qualified Data Summary Table Lot No: ANWJ

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
Vanadium	V	J	BWB-94-03C	7.85 ug/g	LS %R = 42.2%	6
Vanadium	V	J.	BRB-94-12A	15.1 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRB-94-12B	22.0 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRB-94-12C	14.1 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-03A	21.2 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-03B	15.1 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-03C	11.4 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-09A	12.2 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-09B	10.3 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-07A	21.9 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-07B	10.4 ug/g	LS %R = 42.2%	6
Vanadium	. v	J	BRP-94-07C	6.88 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-01A	20.0 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-01B	14.7 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-01C	18.3 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-13A	12.0 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-13B	6.10 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-13C	4.34 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-02A	12.8 ug/g	LS %R = 42.2%	6
√anadium	V	J	BRP-94-02B	21.8 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-02C	8.52 ug/g	LS %R = 42.2%	6

**Environmental Science and Chemistry** 

# **DATA QUALITY ASSESSMENT**

# TOOELE ARMY DEPOT—NORTH AREA DAAA15-90-D-0007, Task 0003

# SWMU 23 BOMB AND SHELL RECONDITIONING BUILDING

# Prepared for:

RUST Environment and Infrastructure 743 Horizon Court, Suite 240 Grand Junction, Colorado 81506

# Prepared by:

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EcoChem Project Number: 8901-30

December 20, 1994

**Approved for Release:** 

Mark T. Brindle Project Manager

EcoChem, Inc.

# **DATA QUALITY ASSESSMENT SUMMARY**

# Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on soil samples and associated laboratory quality control samples. Refer to the Sample Index for sample identifications.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Primary	Secondary
SWMU 23	Arsenic	ANWH	B9 (SOIL)	Jason Ai	W. Jaime Bruton
	PCBs	ANVA	LH17 (SOIL)	Marcia Bender	Eric Strout
	ICP Metals	LWNA	JS12 (SOIL)	Jason Ai	W. Jaime Bruton

Data assessment was based on the QC criteria recommended in the above listed method; the Tooele Army Depot—North Area QC Plan; USEPA Functional Guidelines for Organic and Inorganic Data Review; and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

Copies of the qualified transfer files are included as APPENDIX A. Each lot report also contains a summary table of qualified results. Data Quality Assessment Worksheets, Communication, and Corrective Action Records have been placed in labeled envelopes with the original data packages.

### **DATA VALIDATION QUALIFIER CODES**

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.
R	Unreliable result. Data should not be used. Analyte may or may not be present in the sample.

J Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality Assessment Report should be consulted for reason.

UJ Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report should be consulted for reason.

# SITE DATA QUALITY SUMMARY: SWMU 23—BOMB AND SHELL RECONDITIONING BUILDING

#### Arsenic

One lot of arsenic analyses of soil samples using Method B9 was reviewed. Data were found to be acceptable for use without qualification.

#### **PCBs**

One lot of PCB analyses of soil samples using Method LH17 was reviewed. Data were found to be acceptable for use without qualification.

### ICP-Metals

One lot of ICP-metal analyses of soil samples using method JS12 was reviewed. All vanadium results less than the high spike concentration were qualified as estimated. These results are considered biased low by approximately 40% and the qualified results are slightly less precise than unqualified data. Qualification was recommended by both USAEC and EcoChem.

All antimony detection limits were rejected because of zero antimony recovery in the natural (matrix) spikes. This indicates the possibility of false negatives. The USAEC did not flag this problem because natural spikes are not part of the USAEC QA program; however, they recommend against using Method JS12 for antimony in soil samples because of known poor recovery problems.

Zinc data was qualified as estimated by the USAEC due to low spike recovery. Since the spike recovery was acceptable under Functional Guidelines, we recommend accepting the data without qualification. The results should be considered acceptable for all uses with the understanding that the results are potentially biased low by approximately 25%.

# DATA QUALITY ASSESSMENT ARSENIC-GFAA ANALYSES: SOIL

METHOD: B9

Lot No.: ANWH

#### **DELIVERABLES AND DOCUMENTATION** 1.

All necessary documentation for Lot ANWH were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

#### 11. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody (COC) forms for Lot ANWH were completed properly, and all samples listed in the COC forms were analyzed. All forms were signed and dated. The field chain-ofcustody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for Lot ANWH samples. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. A minimum of 10% of the field ID and laboratory ID were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### 111. FIELD QC SUMMARY

Two sets of field duplicate samples (BRP-94-09C/BRP-94-18C and OSP-94-04C/OSP-94-07A) were analyzed and reviewed. The relative percent difference (RPD) values for these two sets of field duplicate samples were 4.9% and 6.9%, respectively.

No field blanks were submitted with Lot ANWH samples.

#### IV. TECHNICAL ASSESSMENT

#### 1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 180 days from date of collection to analysis.

RUST E&I: Tooele North T3-1994 ic<089D0006>089w0151.doc

## 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

For the initial calibration, the minimum number of standards were used, which met the method criterion. The linearity requirement of  $r \ge to 0.995$  was met. The laboratory analyzed a continuing calibration standard every ten samples as required. All percent recovery (%R) values of initial and continuing calibration verifications were within the control limits of 90% to 110%.

# 3.0 Blank Analyses: ACCEPTABLE/All criteria met.

Calibration blanks (ICB and CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated sample results. Continuing calibration blanks were analyzed after each continuing calibration as required. Preparation blanks were prepared with each digestion batch as required. No target analytes were detected in the blanks at or above the reporting limits.

# **4.0** Matrix Spike/Matrix Spike Duplicate Sample Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

### Discussion:

Two sets of MS/MSD analyses were performed on Samples OSP-94-01A and BRB-94-16A. The %R values for the first set of MS/MSD analyses were 196.0% and 55.0%, which were both outside the Functional Guidelines (2/94) control limit of 75% to 125%. The RPD value for the first set of MS/MSD analyses was 112.4%, which was greater than the control limit of 35%. The %R values for the second MS/MSD set were 80.7% (within control limits), and 69.7%, (less than the control limit). The RPD value for the second set of MS/MSD analyses was 14.6%, which was within the control limit of 35%.

Since MS/MSD analyses were not required in the USATHAMA program and high and low spike recovery values were within the control limits, arsenic results were not qualified due to low or high percent recovery values. However, arsenic results should be considered as estimated.

# 5.0 High Spike and Low Spike Analyses: ACCEPTABLE/All criteria met.

Two high spike and one low spike analyses were performed with each sample lot. The percent recovery values of both high spike analyses were 95.7% and 94.3%, which were within the control chart limits of 86.9% to 109.5%. The percent recovery value of the low spike analysis was 103.9%, which was within the control chart limit of 92.0% to 104.2%.

# 6.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limits for arsenic were reviewed. All reporting limits match the certified reporting limit listed in the laboratory SOP.

# 7.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

# V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAEC Chemistry Branch Response indicates that Lot ANWH is acceptable. The laboratory noted high spike recovery values moving in an upward direction, and low spike recovery values trending above the mean. No qualification is recommended based on these observations.

The data, as reported, are acceptable for use.

# DATA QUALITY ASSESSMENT PCB ANALYSES: SOIL

METHOD: LH17 Lot No.: ANVA

# I. DELIVERABLES AND DOCUMENTATION

Method LH17 is certified for pesticide/PCB compounds in soil. For Lot ANVA, only PCB compound analyses were requested, so a modified Method LH17 was used, reporting PCB compounds only.

All necessary documentation for Lot ANVA were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed. Transfer files, the DataChem QA Status Report, and USAEC Control Chart Response were also provided.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; all laboratory notebook pages and chromatograms were signed and dated by the analyst.

# II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in Lot ANVA. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions. All samples listed on the field chain-of-custody forms were analyzed, with the exception of one equipment rinsate sample, 3ER-39.

Laboratory chain-of-custody forms were present and complete for each sample in Lot ANVA. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field ID and laboratory ID for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. Discrepancies were not found.

## III. FIELD QUALITY CONTROL

Sample 3ER-39 was identified on the field chain-of-custody form as a field equipment rinsate sample. This sample was not analyzed with Lot ANVA. No other field QC samples were identified.

## IV. TECHNICAL ASSESSMENT

# **1.0** Holding Times: ACCEPTABLE/All criteria met.

All soil samples were extracted within seven days of collection and were analyzed within 17 days of extraction. The USATHAMA PAM 11-41-required extraction holding time limit of seven days and analysis holding time of 40 days were met.

# 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

The appropriate number of calibration standards were used to generate a zero-intercept model standard curve for PCB compounds. Linearity was acceptable for the standard curves. Recalculation results of the regression statistics for the curves agreed with the laboratory values.

# 3.0 Daily Calibration: ACCEPTABLE/All criteria met.

The results of the daily calibration standard agreed with the initial calibration standard within 25%. Percent difference (%D) values for PCB compounds were reported by the laboratory. All %D values were within control limits.

# 4.0 Blank Analysis: ACCEPTABLE/All criteria met.

One method blank was associated with the samples in this lot. Target PCB compounds were not detected in the method blank at or above the certified reporting limit (CRL).

# 5.0 Matrix Spike / Matrix Spike Duplicate Analyses: ACCEPTABLE/All criteria met.

The laboratory performed MS/MSD analyses at a frequency of one pair per 20 samples. MS/MSD analysis was performed on Sample BRB-94-16A. Aroclor 1016 and 1260 were contained in the spiking solution. Upper and lower control limits for the measurements of accuracy and precision for Aroclor spikes are not formalized; percent recovery values (%R) were within 35% R and relative percent difference values (RPD) were within 15 RPD and were judged acceptable.

# 6.0 High Spike Analysis: ACCEPTABLE/With the following discussion.

Qualified Data: None.

## Discussion

One high spike analysis was performed with this sample lot. The percent recovery values of the high spike analysis were less than the control limits. However, for both target analytes analyzed in the high spike, the percent recovery values were slightly above the upper warning limit. No action was taken.

# 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data for Lot ANVA were reviewed for PCB compounds; no false negatives or false positives were found. There were no discrepancies between the raw data and the transfer files.

# 8.0 Compound Quantitation and Certified Reporting Limit (CRL): ACCEPTABLE/All criteria met.

Non-target PCB compounds were detected above the CRL in two samples. Compound quantitation was verified by recalculation, and no problems were found. The CRL on the transfer file met those listed in the method. No transcription errors were noted.

9.0 Chromatogram Quality: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion

The chromatogram quality was acceptable for the primary column. On the confirmation column, there was a baseline drift during the middle portion of the analyses. The baseline was manually drawn by the analyst. The baseline drift could result in a low bias; however, as the column was used for compound confirmation only, no data were affected and no action was taken.

## V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found. An examination of the DataChem QA Status Report that includes Lot ANVA revealed no values outside of control limits. The USAEC Control Chart Response accepts Lot ANVA with no comment.

Accuracy was generally acceptable, as demonstrated by the percent recovery values of the spiked compounds. Precision was acceptable, as demonstrated by the low RPD values of the MS/MSD set.

The data, as reported, are acceptable for use.

# DATA QUALITY ASSESSMENT METALS-ICP ANALYSES: SOIL

METHOD: JS12 Lot No.: ANWJ

# I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANWJ were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final samples results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

# II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field chain-of-custody forms were present and complete for Lot ANWJ. All Lot ANWJ samples listed on the chain-of-custody were analyzed. Transcription errors were found in Samples BRB-94-12A, BRB-94-12B, and BRB-94-12C. These sample IDs were incorrectly reported as BRP-94-12A, BRP-94-12B, and BRP-94-12C. in the laboratory chain-of-custody, transfer file printout, and raw data. The laboratory was contacted and corrected forms have not yet been received from the laboratory. All other sample IDs were tracked from the field chain-of-custody to the transfer file printout and no errors were noted. Internal chain-of-custody forms clearly indicated the laboratory numbers and field sample IDs for each sample.

# III. FIELD QUALITY CONTROL

No field blanks or field duplicate samples were submitted with Lot ANWJ samples.

# IV. TECHNICAL ASSESSMENT

**1.0** Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 180 days from date of collection to analysis.

2.0 Instrument Calibration: ACCEPTABLE/With the following discussion.

Qualified Data: None.

RUST E&I: Tooele North T3-1994 sm <089d0008>089w0155.doc

### Discussion:

Instrument calibration consisted of one blank and one standard. Instrument sensitivity could not be evaluated with the documentation provided. All calibration check standards were within  $\pm 10\%$  of the true value with the exception of a percent recovery (%R) for thallium at 127.2%. Since the %R value was greater than the upper control limit of 110% and thallium was not detected in any of the samples, no action was recommended. Plus or minus two times the standard deviation control limits were not utilized because historic calibration check results were not provided.

The laboratory analyzed a continuing calibration verification (CCV) standard every ten samples as required. The %R of the CCV were within  $\pm 10%$  of the true value. Plus or minus two times the standard deviation control limits were not utilized because historic calibration verification results were not provided.

4.0 Blank Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

### Discussion:

Calibration blanks (CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated samples. Continuing calibration blanks were analyzed after each continuing calibration as required. A preparation blank was prepared with each digestion batch as required. No CCB result was greater than the reporting limit or less than the negative reporting limit, and no PB result was greater than the reporting limit. Aluminum, barium, calcium, chromium, iron, potassium, magnesium, manganese, vanadium, and zinc were detected in one QC blank (BL-39714-1). Since this soil blank sample (from RMA soil, R3D-381) was unwashed soil, no qualifications were recommended.

5.0 Matrix Spike Sample Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table ANWJ-1.

#### Discussion:

MS/MSD analyses were performed on Samples OSP-94-05A and BRB-94-12A. The MS %R value for chromium in the first set of MS/MSD analyses was 74%, which was slightly less than the lower control limit of 75%. Since the MSD %R value and relative percent difference (RPD) values were within the control limits, no action was recommended. The antimony %R values in both MS/MSD analyses were 0%, which indicates antimony analyses by ICP method were questionable. Antimony was not detected in any of the samples leading to a possibility of false non-detects. The quantitation limits for antimony were rejected and not usable for any purposes. All other %R values and RPD values were within the control limits.

# **6.0 High Spike and Low Spike Analyses:** ACCEPTABLE/With the following discussion.

Qualified Data: See Qualified Data Summary Table ANWJ-1.

#### Discussion:

One low spike and two high spike analyses were performed with this sample lot. Recovery values were evaluated based on the control chart upper and lower limits. The %R of low spike and high spike analyses were within the control limits, with the exception of those listed in the table below.

Analyte	Low Spike	Control Limit	1st High Spike	2nd High Spike	Control Limits
Beryllium	Acceptable	92.5% to 105.1%	99%	100%	94.2% to 98.8%
Cadmium	Acceptable	86.6% to 107.8%	98%	100%	92.4% to 97.2%
Cobalt	Acceptable	94.8% to 124.2%	Acceptable	103%	95.0% to 102.2%
Chromium	Acceptable	90.3% to 111.5%	101%	102%	96.6% to 100.4%
Copper	Acceptable	104.8% to 121.8%	Acceptable	101%	95.2% to 100.4%
Nickel	Acceptable	88.8% to 126.2%	Acceptable	101%	94.0% to 100.8%
Lead	Acceptable	88.9% to 116.9%	102%	104%	95.1% to 100.3%
Antimony	Acceptable	45.1% to 75.9%	Acceptable	87.8%	79.1% to 87.7%
Vanadium	42.0%	69.2% to 127.8%	Acceptable	Acceptable	92.8% to 101.4%
Zinc	76.7%	88.5% to 104.7%	Acceptable	Acceptable	93.7% to 100.3%

The vanadium low spike %R value was less than both the USAEC control limit and the control limit specified in Functional Guidelines (2/94). Vanadium results in field samples that were less than the high spike concentration (30  $\mu$ g/g) were considered biased low and were qualified as estimated. Since both vanadium high spike %R values were within the control limits, vanadium results greater than the high spike concentration were acceptable and no other qualifications are recommended.

All other spike recovery values were close to the USAEC control limits and still within the control limit specified in Functional Guidelines (2/94), no other qualifications are recommended.

# 7.0 Duplicate Sample Analyses: NOT APPLICABLE

Laboratory duplicate analyses were not performed with this sample lot.

# 8.0 ICP Interference Check Sample (ICS) Analyses: NOT PERFORMED

ICP interference check sample analyses were not performed with this sample lot.

# 9.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits matched the certified reporting limit listed in the laboratory SOP.

## 10.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

# V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAEC Chemistry Branch Response indicates that Lot ANWJ is partially acceptable. The laboratory noted high spike recovery values trending above the central line for cadmium and lead; high spike recovery values moving in a downward direction for chromium; low spike range trending above the central line for boron, beryllium, and lead; low spike recovery values trending below the central line for copper and molybdenum; low spike recovery values moving in an upward direction for cobalt, tin, tellurium and thallium; low spike recovery values moving in a downward direction for molybdenum, nickel, lead, vanadium and zinc; and low spike recovery values less than the control chart lower limits for vanadium and zinc.

Vanadium was flagged with a "7" by the laboratory indicating low spike recovery. All vanadium results that were less than the high spike concentration (30  $\mu$ g/g) should be considered biased low and qualified. The zinc low spike %R value was 76.7%, which was less than the control chart lower limit of 88.5%, but within the Functional Guidelines (2/94) control limits of 75% to 125%. No qualification was recommended. No other qualifications are recommended on these observations.

The data, as qualified, are acceptable for use.

# Qualified Data Summary Table Lot No: ANWJ

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report
Antimony	SB	R	OSP-94-05A		MS/MSD %R = 0%	Section
Antimony	SB	R	OSP-94-05B	LT 19.6 ug/g		5
Antimony	SB	R	OSP-94-05B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	·	<del></del>	LT 19.6 ug/g	MS/MSD %R = 0%	5
	SB	R	OSP-94-06A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony		R	OSP-94-06B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OSP-94-06C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-01A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-01B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-01C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-02A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony .	SB	R	BWB-94-02B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-02C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-03A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-03B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-03C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRB-94-12A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRB-94-12B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRB-94-12C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-03A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R_	BRP-94-03B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-03C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-09A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-09B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-07A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-07B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-07C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-01A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-01B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-01C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-13A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-13B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-13C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-02A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-02B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-02C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Vanadium	V	J	OSP-94-05A	21.7 ug/g	LS %R = 42.2%	6
Vanadium	V	J	OSP-94-05B	13.7 ug/g	LS %R = 42.2%	6
Vanadium	V	J	OSP-94-05C	10.6 ug/g	LS %R = 42.2%	6 .
Vanadium	V	J	OSP-94-06A	21.0 ug/g	LS %R = 42.2%	6
Vanadium	V	J	OSP-94-06B	13.3 ug/g	LS %R = 42.2%	6
Vanadium	V	J	OSP-94-06C	16.8 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BWB-94-01A	10.6 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BWB-94-01B	15.3 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BWB-94-02A	10.9 ug/g	LS %R = 42.2%	6
Vanadium	1 0	J	BWB-94-02B	7.33 ug/g	LS %R = 42.2%	6
Vanadium	. v	J	BWB-94-03A	10.2 ug/g	LS %R = 42.2%	6
Vanadium	l v	J	BWB-94-03B	20.4 ug/g	LS %R = 42.2%	6

# Qualified Data Summary Table Lot No: ANWJ

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
Vanadium	V	J	BWB-94-03C	7.85 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRB-94-12A	15.1 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRB-94-12B	22.0 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRB-94-12C	14.1 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-03A	21.2 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-03B	15.1 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-03C	11.4 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-09A	12.2 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-09B	10.3 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-07A	21.9 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-07B	10.4 ug/g	LS %R = 42.2%	6
Vanadium	. v	J	BRP-94-07C	6.88 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-01A	20.0 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-01B	14.7 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-01C	18.3 ug/g	LS %R = 42.2%	6
Vanadium	T V	J	BRP-94-13A	12.0 ug/g	LS %R = 42.2%	6
Vanadium	+ v	J	BRP-94-13B	6.10 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-13C	4.34 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-02A	12.8 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-02B	21.8 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-02C	8.52 ug/g	LS %R = 42.2%	6



**Environmental Science and Chemistry** 

# **DATA QUALITY ASSESSMENT**

# TOOELE ARMY DEPOT—NORTH AREA DAAA15-90-D-0007, Task 0003

# SWMU 31 FORMER TRANSFORMER BOXING AREA

# Prepared for:

RUST Environment and Infrastructure 743 Horizon Court, Suite 240 Grand Junction, Colorado 81506

# Prepared by:

EcoChem, Inc. 801 Second Avenue, Suite 1401 Seattle, Washington 98104

EcoChem Project Number: 8901-30

December 20, 1994

Approved for Release:

Mark T. Brindle Project Manager

EcoChem, Inc.

# **DATA QUALITY ASSESSMENT SUMMARY**

# Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on soil samples and associated laboratory quality control samples. Refer to the Sample Index for sample identifications.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Primary	Secondary
SWMU 31	ICP Metals	ANUC	JS12 (SOIL)	Jason Ai	W. Jaime Bruton
	SVOC	ANFR	LM25 (SOIL)	Bruce Tiffany	Eric Strout

Data assessment was based on the QC criteria recommended in the above listed method; the Tooele Army Depot—North Area QC Plan; USEPA Functional Guidelines for Organic and Inorganic Data Review; and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

Copies of the qualified transfer files are included as APPENDIX A. Each lot report also contains a summary table of qualified results. Data Quality Assessment Worksheets, Communication, and Corrective Action Records have been placed in labeled envelopes with the original data packages.

# **DATA VALIDATION QUALIFIER CODES**

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.				
R	Unreliable result. Data should not be used. Analy may or may not be present in the sample.				

- J Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality Assessment Report should be consulted for reason.
- UJ Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report should be consulted for reason.

# SITE DATA QUALITY SUMMARY: SWMU 31—FORMER TRANSFORMER BOXING AREA

### ICP-Metals

One lot of ICP-metal analyses of soil samples using method JS12 were reviewed. All antimony detection limits were rejected because of zero antimony recovery in the natural (matrix) spikes. this indicates the possibility of false negatives. The USAEC did not flag this problem because natural spikes are not part of the USAEC QA program; however, they recommend against using Method JS12 for antimony in soil samples because of known poor recovery problems.

# Semivolatile Organic Compounds

One lot of semivolatile organic compound (SVOC) analyses of soil samples using Method LM25 was reviewed. Bis(2-ethylhexyl)phthalate and several unknowns were qualified due to blank contamination. Hexachloro cyclopentadiene results (all non-detects) were qualified as estimated due to decreased sensitivity during continuing calibration. Three PCB aroclors (PCB 1016, 1260, and 1262) and toxaphene were reported as less than the CRL ("LT") with no flag or qualifying code. Because they were not analyzed for in the samples, the results should be qualified as rejected.

All other SVOC are acceptable for use as reported.

# DATA QUALITY ASSESSMENT METALS-ICP ANALYSES: SOIL

METHOD: JS12 LOT NO.: ANUC

#### l. **DELIVERABLES AND DOCUMENTATION**

All necessary documentation for Lot ANUC were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final samples results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

#### CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION II.

The field chain-of-custody forms were present and complete for Lot ANUC. All Lot ANUC samples listed on the chain-of-custody were analyzed. Sample IDs were tracked from the field chain-of-custody to the transfer file printout and no errors were noted. Internal chain-of-custody forms clearly indicated the laboratory numbers and field sample IDs for each sample. No errors in field IDs were noted.

#### III. FIELD QUALITY CONTROL

One set of field duplicate samples (TBS-94-09/TBS-94-22) was analyzed and reviewed. The relative percent difference (RPD) values for this set of field duplicate samples ranged from 0.4% to 15.2%, which were within the control limit of 50%.

No field blanks were submitted with Lot ANUC samples.

#### IV. TECHNICAL ASSESSMENT

1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 180 days from date of collection to analysis.

2.0 Instrument Calibration: ACCEPTABLE/With the following discussion.

Qualified Data: None.

### Discussion:

Instrument calibration consisted of one blank and one standard. Instrument sensitivity could not be evaluated with the documentation provided. All calibration check standards were within  $\pm 10\%$  of the true value with the exception of thallium with a percent recovery (%R) value of 120.4%. Since the %R value was greater than the upper control limit of 110% and thallium was not detected in any of the samples, no action was recommended. Plus or minus two times the standard deviation control limits were not utilized because historic calibration check results were not provided.

The laboratory analyzed a continuing calibration verification (CCV) standard every ten samples as required. The percent recovery of the CCVs were within  $\pm 10\%$  of the true value. Plus or minus two times the standard deviation control limits were not utilized because historic calibration verification results were not provided.

4.0 Blank Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

## Discussion:

Calibration blanks (CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated sample results. Continuing calibration blanks were analyzed after each continuing calibration as required. A preparation blank was prepared with each digestion batch as required. No CCB result was greater than the reporting limit or less than the negative reporting limit, and no PB result was greater than the reporting limit. Aluminum, barium, calcium, chromium, iron, potassium, magnesium, manganese, vanadium and zinc were detected in one QC blank (BL-38668-1). Since this soil blank sample (from RMA soil, R3D-381) was unwashed soil, no qualifications were recommended.

5.0 Matrix Spike Sample Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table ANUC-1.

### Discussion:

Two sets of MS/MSD analyses were performed on Samples CRS-94-01 and CRS-94-14. The antimony %R values in both MS/MSD analyses were 0% which indicates antimony analyses by ICP method were questionable. As antimony was not detected in any of the samples a possibility of false non-detects exists. The quantitation limits for antimony were rejected and not usable for any purposes. All other %R and RPD values were within the control limits.

# **6.0 High Spike and Low Spike Analyses:** ACCEPTABLE/With the following discussion.

Qualified Data: None.

## Discussion:

One low spike and two high spike analyses were performed with this sample lot. Recovery values were evaluated based on the control chart upper and lower limits. The %R values of low spike and high spike analyses were within the control limits, with the exception of those listed in the table below.

Analyte	Low Spike	Control Limit	1st High Spike	2nd High Spike	Control Limits
Beryllium	Acceptable	92.5% to 105.1%	Acceptable	93.7%	94.5% to 100.5%
Vanadium	Acceptable	59.0% to 120.4%	Acceptable	92.7%	92.8% to 101.4%

As these spike recovery values were close to the USAEC control limits and still within the control limit specified in Functional Guidelines (2/94), no qualifications are recommended.

# 7.0 Duplicate Sample Analyses: NOT APPLICABLE

Laboratory duplicate analyses were not performed with this sample lot.

# 8.0 ICP Interference Check Sample (ICS) Analyses: NOT PERFORMED

ICP interference check sample analyses were not performed with this sample lot.

# 9.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits match the certified reporting limit listed in the laboratory SOP.

## 10.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

# V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAEC Chemistry Branch Response indicates that Lot ANUC is acceptable. The laboratory noted high spike recovery values trending above the central line for cadmium and lead; high spike recovery values moving in a downward direction for chromium; low spike recovery values above the central line for boron, beryllium, and lead; low spike recovery values trending below the central line for copper and molybdenum; low spike recovery values moving in an upward

direction for cobalt, tin, tellurium, and thallium; and low spike recovery values moving in a downward direction for molybdenum, nickel, lead, and vanadium. No other qualification is recommended based on these observations.

The data, as qualified, are acceptable for use.

# Qualified Data Summary Table Lot No: ANUC

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
Antimony	SB	R	CRS-94-01	LT 19.6 ug/g	MS/MSD %R = 0%	5.
Antimony	SB	R	CRS-94-02	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-03	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-04	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-05	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-06	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-07	LT 19.6 ug/g	MS/MSD %R = 0%	5 .
Antimony	SB	R	CRS-94-08	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-09	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-10	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-11	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-12	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-13	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-14	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-15	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-16	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-17	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	CRS-94-18	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OBS-94-29	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OBS-94-30	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	\$B	R	OBS-94-31	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OBS-94-32	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-09	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-12	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-15	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-18	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-21	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-22	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-03	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TBS-94-06	LT 19.6 ug/g	MS/MSD %R = 0%	5

SEMIVOLATILE ORGANIC ANALYSES: SOIL

METHOD: LM25 LOT NO.: ANFR

## I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANFR were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. Sample moisture data was provided on the transfer file, but moisture raw data logbook pages were not provided. Results for MS/MSD analyses have been included although they are not required by USATHAMA 11-41 for Class 1A analyses. Transfer files, DataChem QA Status Reports and USAEC Control Chart Response were provided. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: Changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; correction fluid or tape was not found on any of the raw data; proper units for numerical values were used; the laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in Lot ANFR. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions. All samples listed on ANFR chain-of-custody forms were analyzed.

Laboratory chain-of-custody forms were present and complete for each sample in Lot ANFR. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field IDs and laboratory IDs for Samples VGS-94-RL and VGS-94-23 were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. Field Quality Control

Two samples were submitted as a field duplicate set (TBS-94-09 and TBS-94-22). Relative percent difference (RPD) values were calculated for all positive results detected in both samples. Field precision is considered acceptable on the basis of low RPD values (<30%). No field or trip blanks were submitted with Lot ANFR.

#### IV. TECHNICAL ASSESSMENT

# 1.0 Sample Holding Times: ACCEPTABLE/All criteria met.

The extraction holding time criterion listed in Method LM25 for semivolatiles in a soil matrix is 14 days from date sampled to extraction date. The analytical holding time criterion listed in Method LM25 for soil matrices is 40 days from extraction date to date of analysis. All soil samples were extracted within four days and analyzed within six days of extraction.

## 2.0 GC/MS Instrument Performance Check: ACCEPTABLE/All criteria met.

DFTPP was analyzed at the beginning of each twelve hour analytical sequence as required. All DFTPP data were provided, and all results were within the specified control limits.

# 3.0 Initial and Daily Calibration: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table

#### Discussion:

The initial calibration was performed at the proper frequency. Six standards were used, meeting USATHAMA PAM 11-41 criterion for Class 1A. Relative response factors (RRF) and percent relative standard deviation (%RSD) values were verified by recalculation. No calculation or transcription errors were noted. All %RSD values were below the 30% upper control limit. Several compounds (heptachloroepoxide, chlordane and endosulfan II) had RRF values below the 0.05 lower control limit. These compounds are not consistently recoverable using GCMS methods, and historically have very low response factors. However, these compounds had acceptable %RSD values, indicating a stable response, and all RRF values were above 0.01. No action was taken.

Four compounds (PCB-1016, PCB-1260, PCB-1262, and toxaphene) were not included in the initial calibration, any daily calibration, and were not part of the list of compounds scanned for in any sample. These compounds were reported on the transfer files as LT (less than) values, with no laboratory flags. As these compounds were not scanned for (except as unknown compounds), the reporting limits (CRL) are rejected (R).

Continuing calibrations (CCAL) were run at the correct frequency (before and after sample analyses). All daily calibrations met the Method LM25 criteria. Two of the CCAL had compounds with percent difference (%D) values greater than the ±25% control limits. A list of all %D outliers is in the Data Validation Worksheet. There were no positive results for any of these compounds in the samples. The detection limits (CRL) were judged not significantly affected, with the exception of the hexachlorocyclopentadiene detection limits. This compound had a %D value of 57% in the second CCAL. This %D value indicates a significant loss of instrument sensitivity. As all sample analyses are associated with this CCAL, all

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hexachlorocyclopentadiene detection limits are estimated (UJ). All other %D values were acceptable.

**4.0** Blank Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table

#### Discussion:

A method blank was analyzed at the required frequency. Two phthalate esters were detected at levels below the CRL. Several unknown compounds were also detected. A list of all compounds detected in the method blank is in the Data Quality Assessment Worksheet. Action levels were established at ten times the concentration in the blank. One phthalate ester [bis(2-ethylhexyl) phthalate] was detected in Sample TBS-94-22 at a concentration below the action level. This result was qualified as not detected (U) at the reported level. Unknown compounds that were detected in the samples at concentrations less than the action levels were rejected (R). The unknown compounds were verified using the scan number, retention times, and a comparison of the mass spectra.

No field or equipment blanks were submitted with this lot.

**5.0** Surrogate Recovery: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Surrogate compound percent recoveries (%R) were reviewed by recalculation. See the Data Quality Assessment Worksheets for examples of surrogate calculations. The upper and lower surrogate percent recovery limits from the control charts in the DataChem QA Status Report are based upon a standard matrix (ASTM Type II water) surrogate quality control spike. There are no control charts for field sample (natural matrix) surrogate recovery. For data assessment purposes, the surrogate percent recoveries were compared to the limits specified in the three day moving average percent recovery control charts in the DataChem QA Status Report, and the surrogate recovery limits specified in the EPA Contract Laboratory Program (CLP) 3/90 Statement Of Work (SOW). The CLP SOW does not specify recovery limits for two of the USATHAMA-specified surrogate compounds, di-n-octyl phthalate-d4 and diethylphthalate-d4. For these compounds, a recovery range of 20% to 130% was used to assess the field sample results. The range is the same as the range recommended in the CLP SOW for new surrogate compounds.

One surrogate standard (di-n-octyl phthalate-d4) had percent recovery values above the 130% upper control limit (UCL) criterion in seven samples. No data qualifiers are recommended unless two or more semivolatile surrogates within the same fraction (acid or base/neutral) are outside the control limits. No action was taken. One acid fraction surrogate (2-fluorophenol)

had a low recovery (3%) in Sample CRS-94-14. The low recovery was caused by a retention time shift in the analysis which favored early elution of the analytes. The surrogate compound (2-fluorophenol) had mainly eluted before the mass spectrometer data acquisition initiated. Comparison of internal standard areas and subsequent surrogate standard recoveries indicate that this temporary change in elution characteristics (retention time shift) had no significant affect upon data quality. As all other acid fraction surrogates were acceptable, no action was taken. All other surrogate recoveries were within the limits specified by the EPA CLP 3/90 SOW. For surrogate compounds not specified in the EPA CLP 3/90 SOW, all other recoveries fell within the 20% to 130% recovery range.

In the 19 field and QC sample analyses, 14 analyses each had from one to three percent recovery values outside the acceptance range specified in the DataChem QA Status Report control charts. The samples and the surrogate outliers are listed in the Data Quality Assessment Worksheet. As the surrogate percent recoveries met the CLP limits (except as noted above), and as the surrogate recoveries were not significantly outside the control chart limits, no qualifiers were issued to the samples based on control chart surrogate percent recovery outliers.

# 6.0 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample Analyses: ACCEPTABLE/All criteria met.

MS/MSD analyses were submitted with lot ANFR. MS/MSD analyses were performed using Sample TBS-94-06. All percent recovery (%R) values are within 80% to 120%, indicating an acceptable degree of accuracy. All relative percent difference (RPD) values are three percent or less, indicating an acceptable degree of precision.

## 7.0 Field Duplicates: ACCEPTABLE/All criteria met.

Two samples were submitted as a field duplicate set (TBS-94-09 and TBS-94-22). Relative percent difference (RPD) values were calculated for all positive results detected in both samples. Field precision is considered acceptable on the basis of low RPD values (<30%).

# 8.0 Internal Standards Performance: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Analysis of areas and retention times for internal standards was conducted (see Data Quality Assessment Worksheets). No quality control criteria for internal standards are specified in USATHAMA PAM 11-41 or the laboratory method. For data assessment purposes, the criteria from U.S. EPA National Functional Guidelines was used to assess the internal standards.

One internal standard retention time was outside the acceptance window of plus or minus 30 seconds of the daily calibration internal standard retention time. No data were impacted by this non-compliance, and no action was taken.

All other internal standard areas were within the acceptance window of 50% to 200% of the continuing calibration internal standard area. All other retention times were within  $\pm 30$  seconds of the continuing calibration internal standard retention time.

# 9.0 Compound Identification: ACCEPTABLE/All criteria met.

All compound identifications were reviewed and are found to be acceptable.

# 10.0 Compound Quantitation and Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

Target compound quantitation were recalculated using the method described in the CLP SOW, with results similar to those reported by the laboratory. The compound quantitations were judged to be acceptable. The reported CRL met those listed in Method LM25. No transcription errors were found.

# 11.0 Unknown Compounds: ACCEPTABLE/With the following qualification.

Qualified Data: See Section 4.0. All other unknown compounds were qualified JN.

#### Discussion:

Mass spectral library searches to identify unknown (non-target) compounds were performed as required, and all reported identifications were acceptable. As discussed in Section 4.0, unknown compounds in a sample that were also detected in the associated method blank were rejected (R). All other unknown compounds are qualified as estimated with tentative identification (JN).

# 12.0 System Performance: ACCEPTABLE/All criteria met.

No signs of degraded instrument performance were observed. The analytical systems were judged to have been in tune, within control, and stable during the course of these analyses.

#### 13.0 OVERALL ASSESSMENT/QC SUMMARY

Based on this evaluation, the laboratory followed the specified analytical method.

Accuracy is acceptable, as demonstrated by the %R values of surrogate and matrix spike recoveries. Precision is acceptable on the basis of MS/MSD RPD values.

The DataChem QC Status report notes that no outliers or trends were found in Lot ANFR. The DataChem QA Status Report recommends that Lot ANFR be accepted. The USAEC Control Chart Response letter accepts Lot ANFR with no comments.

Data qualifiers were assigned due to calibration outliers and blank contamination.

Data that are rejected are unusable for any purpose. All other data, as qualified, are acceptable for use.

# Qualified Data Summary Table Lot No: ANFR

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
bis(2-ethylhexyl)phthalate	B2EHP	U	TBS-94-22	<del></del>	< Action Level	4
hexachlorocyclopentadiene	CL6CP	บัง	All samples		CCal %D > 50% (57.4)	3
PCB 1016	PCB016	R	All Samples	NA SISE	Analytes not scanned for	3
PCB 1260	PCB260	R	All Samples	NA	Analytes not scanned for	3
PCB 1262	PCB262	R	All Samples	NA	Analytes not scanned for	3
toxaphene	TXPHEN	R	All Samples	NA	Analytes not scanned for	3
UNK527	UNK527	R	CRS-94-14		< Action Level	4
UNK642	UNK642	R	CRS-94-14	<del></del>	< Action Level	4
UNK663	UNK663	R	CRS-94-14	<del></del>	< Action Level	4
UNK530	UNK530	R	CRS-94-15	0.3	< Action Level	4
UNK641	UNK641	R	CRS-94-15	0.7	< Action Level	
UNK663	UNK663	R	CRS-94-15	0.7	< Action Level	4
UNK530	UNK530	R	CRS-94-16			4
UNK641	UNK641	R	CRS-94-16	0.3		4
UNK663	UNK663	R	CRS-94-16	0.5	< Action Level	4
UNK530	UNK530	R	CRS-94-16	0.5	< Action Level	4
UNK537	UNK537	R	CRS-94-17		< Action Level	4
UNK537	UNK537	R		0.3	< Action Level	4
UNK641	UNK641	R	CRS-94-17	1	< Action Level	4
UNK663	UNK663	R	CRS-94-17	1	< Action Level	4
UNK530	UNK530	R	CRS-94-17	0.7	< Action Level	4
UNK537	UNK537	R	CRS-94-18	0.3		4
UNK641	UNK641		CRS-94-18		< Action Level	4
UNK663		R	CRS-94-18	1	< Action Level	4
UNK530	UNK663	R	CRS-94-18	0.7	< Action Level	4
UNK641	UNK530	R	VGS-94-RL	0.3	< Action Level	4
UNK663	UNK641	R	VGS-94-RL		< Action Level	4
UNK641		R	VGS-94-RL	2	< Action Level	4
UNK663		R	VGS-94-23	4	< Action Level	4
UNK530	UNK663	R	VGS-94-23	1		4
UNK641		R	TBS-94-09		< Action Level	4
	UNK641	R	TBS-94-09	1	< Action Level	4
UNK530	UNK530	R	TBS-94-12	0.5	< Action Level	4
UNK537		R	TBS-94-12		< Action Level	4
UNK641		R	TBS-94-12		< Action Level	4
UNK663	UNK663	R	TBS-94-12		< Action Level	4
UNK530		R	TBS-94-15		< Action Level	4
UNK537		R	TBS-94-15	0.5	< Action Level	4
UNK641		R	TBS-94-15		< Action Level	4
UNK530		R	TBS-94-18		< Action Level	4
UNK537		R	TBS-94-18	0.4	< Action Level	4
UNK641		R	TBS-94-18	1	< Action Level	4
UNK530		R	TBS-94-21	0.3	< Action Level	4
UNK537		R	TBS-94-21	0.4	< Action Level	4
UNK641		R	TBS-94-21	2	< Action Level	4
JNK530		R	TBS-94-22	0.3	< Action Level	4
JNK641		R	TBS-94-22	1	< Action Level	4
JNK529		R	TBS-94-03	1	< Action Level	4
JNK641		R	TBS-94-03	0.9	< Action Level	4
JNK530	UNK530	R	TBS-94-06	0.3	< Action Level	4
UNK641	UNK641	R	TBS-94-06	0.4	< Action Level	4

**Environmental Science and Chemistry** 

# **DATA QUALITY ASSESSMENT**

# TOOELE ARMY DEPOT—NORTH AREA DAAA15-90-D-0007, Task 0003

# SWMU 32 PCB SPILL SWMU

# Prepared for:

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## Prepared by:

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EcoChem Project Number: 8901-30

December 20, 1994

**Approved for Release:** 

Mark T. Brindle Project Manager

EcoChem, Inc.

# DATA QUALITY ASSESSMENT SUMMARY

# Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on soil samples and associated laboratory quality control samples. Refer to the Sample Index for sample identifications.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Primary	Secondary
SWMU 32	ICP Metals	ANVM	JS12 (SOIL)	Jason Ai	W. Jaime Bruton
	SVOC	ANUH	LM25 (SOIL)	Bruce Tiffany	Eric Strout

Data assessment was based on the QC criteria recommended in the above listed method; the Tooele Army Depot—North Area QC Plan; USEPA Functional Guidelines for Organic and Inorganic Data Review; and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

Copies of the qualified transfer files are included as APPENDIX A. Each lot report also contains a summary table of qualified results. Data Quality Assessment Worksheets, Communication, and Corrective Action Records have been placed in labeled envelopes with the original data packages.

# **DATA VALIDATION QUALIFIER CODES**

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.
R	Unreliable result. Data should not be used. Analyte may or may not be present in the sample.

J Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality Assessment Report should be consulted for reason.

UJ Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report should be consulted for reason.

## SITE DATA QUALITY SUMMARY: SWMU 32—PCB SPILL SWMU

#### ICP-Metals

One lot of ICP-metal analyses of soil samples using method JS12 were reviewed. All antimony detection limits were rejected because of zero antimony recovery in the natural (matrix) spikes. this indicates the possibility of false negatives. The USAEC did not flag this problem because natural spikes are not part of the USAEC QA program; however, they recommend against using Method JS12 for antimony in soil samples because of known poor recovery problems.

#### SVOC

One lot of SVOC analyses for soil samples using Method LM25 was reviewed. All samples had mone or more analyte result(s) qualified due to poor internal standard response, a parameter not checked under standard USAEC review. Results qualified for poor internal standard response should be considered to be potentially biased low.

#### PCB/Pesticides

Four compounds (PCB-1016, PCB-1260, PCB-1262, and toxaphene) were not included in the initial calibration, any daily calibration, and wree not part of the list of compounds scanned for in any sample. These compounds were reported on the transfer files as LT (less than) values, with no laboratory flags. As these compounds were not scanned for (except as unknown compounds) the reporting limits (CRL) are rejected (R). For one sample (BRP-94-18A) PCB compounds were reported as the tentatively identification for many of the unknown (non-target) compound peaks. As specified by USATHAMA PAM 11-41, the PCB compounds were reported on the transfer file as UNKxxx, where xxx is a three digit number. Due to the limitations of the calibration and the GCMS detector, these PCB compounds cannot be identified as unique isomers, and cannot be accurately quantitated. However, the presence of PCB compounds in this sample indicates that multiple PCB isomers could be present in high concentrations. The identification should be qualitative (PCB compounds are present), and the reported concentrations should be considered gross estimates.

# DATA QUALITY ASSESSMENT METALS-ICP ANALYSES: SOIL

METHOD: JS12 LOT No.: ANVM

## 1. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANVM were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final samples results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field chain-of-custody forms were present and complete for Lot ANVM. One field rinse blank (3ER-35) was listed on the field Chain-of-Custody for metal analysis. This sample's results were not provided with Lot ANVM. All other Lot ANVM samples listed on the chain-of-custody were analyzed. Sample IDs were tracked from the field chain-of-custody to the transfer file printout, and no errors were noted. Internal chain-of-custody forms clearly indicated the laboratory numbers and field sample IDs for each sample. No errors in field IDs were noted.

#### III. FIELD QUALITY CONTROL

The duplicates of TDP-94-16A and TDP-94-16B, Samples TDP-94-09A and TDP-94-09B were not submitted with Lot ANVM so field precision could not be evaluated.

## IV. TECHNICAL ASSESSMENT

**1.0** Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 180 days from date of collection to analysis.

2.0 Instrument Calibration: ACCEPTABLE/With the following discussion.

Qualified Data: None.

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#### Discussion:

Instrument calibration consisted of one blank and one standard. Instrument sensitivity could not be evaluated with the documentation provided. All calibration check standards were within ±10% of the true value with the exception of thallium with a percent recovery (%R) value of 122.0%. Since the %R value was greater than the upper control limit of 110% and thallium was not detected in any of the samples, no action was recommended. Plus or minus two times the standard deviation control limits were not utilized because historic calibration check results were not provided.

The laboratory analyzed a continuing calibration verification (CCV) standard every ten samples as required. The %R of the CCVs were within  $\pm 10%$  of the true value. Plus or minus two times the standard deviation control limits were not utilized because historic calibration verification results were not provided.

4.0 Blank Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Calibration blanks (CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated sample results. Continuing calibration blanks were analyzed after each continuing calibration as required. A preparation blank was prepared with each digestion batch as required. No CCB result was greater than the reporting limit or less than the negative reporting limit and no PB result was greater than the reporting limit. Aluminum, barium, calcium, iron, potassium, magnesium, manganese, and vanadium were detected in one QC blank (BL-39448-1). Since this soil blank sample (from RMA soil, R3D-381) was unwashed soil, no qualifications were recommended.

5.0 Matrix Spike Sample Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table ANVM-1.

#### Discussion:

Two sets of MS/MSD analyses were performed on Samples TDP-94-05B and TDP-94-13A. The MSD %R value for manganese in the first set of MS/MSD analyses was 136%, which was greater than the upper control limit of 125%. Since the MS %R value and RPD value for manganese in the first set of MS/MSD analyses were within the control limits, no action was recommended. The antimony %R values in both MS/MSD analyses were 0% which indicates antimony analyses by ICP method were questionable. As antimony was not detected in any of the samples, a possibility of false non-detects exist. The quantitation limits for antimony were

rejected and not usable for any purposes. All other %R and RPD values were within the control limits.

#### High Spike and Low Spike Analyses: ACCEPTABLE/With the following 6.0 discussion.

Qualified Data: None.

#### Discussion

One low spike and two high spike analyses were performed with this sample lot. Recovery values were evaluated based on the control chart upper and lower limits. The %R of the low spike and both high spike analyses were within the control limits, with the exception of those listed in the table below.

Analyte	Low Spike	Control Limit	1st High Spike	2nd High Spike	Control Limits
Beryllium	Acceptable	92.5% to 105.1%	100.0%	99.2%	94.25% to 98.8%
Chromium	Acceptable	90.5% to 110.3%	101.0%	Acceptable	96.6% to 100.4%
Vanadium	Acceptable	59.2% to 127.8%	101.3%	Acceptable	93.7% to 100.5%

As these spike recovery values were close to the USAEC control limits and still within the control limits specified in Functional Guidelines (2/94), no qualifications are recommended.

#### 7.0 **Duplicate Sample Analyses: NOT APPLICABLE**

Laboratory duplicate analyses were not performed with this sample lot.

#### 8.0 ICP Interference Check Sample (ICS) Analyses: NOT PERFORMED

ICP interference check sample analyses were not performed with this sample lot.

#### 9.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limit for each element was reviewed. All reporting limits match the certified reporting limit listed in the laboratory SOP.

#### Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

#### ٧. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAEC Chemistry Branch Response indicates that Lot ANVM is acceptable. The laboratory noted high spike recovery values trending above the central line for cadmium and lead; high spike recovery values moving in a downward direction for chromium; low spike recovery values above the central line for boron, beryllium, and lead; low spike recovery values trending below the central line for copper and molybdenum; low spike recovery values moving in an upward direction for cobalt, tin, tellurium, and thallium; low spike recovery values moving in a downward direction for molybdenum, nickel, lead, vanadium, and zinc; and low spike range above the control chart upper limit for copper and nickel. No other qualification is recommended based on these observations.

The data, as qualified, are acceptable for use.

# Qualified Data Summary Table Lot No: ANVM

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
Antimony	SB	R	TDP-94-05B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-06A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-06B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-07A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-07B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-03A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-03B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-04A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-04B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-05A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-13A	LT 19.6 ug/g	MS/MSD %R = 0%	5 ·
Antimony	SB	R	TDP-94-13B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	· SB	R	TDP-94-14A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-14B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-15A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-15B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-16A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	TDP-94-16B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	PPB-94-01A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	PPB-94-01B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	Ŕ	PPB-94-01C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	PPB-94-08A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	PPB-94-08B	LT 19.6 ug/g	MS/MSD %R = 0%	5
\ntimony	SB	R	PPB-94-08C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	PPB-94-03A	LT 19.6 ug/g	MS/MSD %R = 0%	5
\ntimony	SB	R	PPB-94-03B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Intimony	SB	R	PPB-94-03C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Intimony	SB	R	PPS-94-05	LT 19.6 ug/g	MS/MSD %R = 0%	5

SEMIVOLATILE ORGANIC ANALYSES: SOIL

METHOD: LM25 LOT No.: ANUH

## I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANUH were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. Sample moisture data was provided on the transfer file, but moisture raw data logbook pages were not provided. Results for MS/MSD analyses have been included although they are not required by USATHAMA 11-41 for Class 1A analyses. Transfer files, DataChem QA Status Reports and USAEC Control Chart Response were provided. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: Changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; correction fluid or tape was not found on any of the raw data; proper units for numerical values were used; the laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in Lot ANUH. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions. All samples listed on ANUH chain-of-custody forms were analyzed.

Laboratory chain-of-custody forms were present and complete for each sample in Lot ANUH. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field IDs and laboratory IDs for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

### III. Field Quality Control

Two samples were submitted as a field duplicate set (BRP-94-09C and BRP-94-18C). Relative percent difference (RPD) values were calculated for all positive results detected in both samples. Field precision is considered acceptable on the basis of low RPD values (<30%). Two other samples (BRP-94-18A and BRP-94-18B) were listed as field duplicates on the chain-of-custody. However, the replicates of these samples were not included as part of Lot ANUH. An assessment of field precision could not be made for those samples. No field or trip blanks were submitted with Lot ANUH.

#### IV. TECHNICAL ASSESSMENT

# **1.0** Sample Holding Times: ACCEPTABLE/All criteria met.

The extraction holding time criterion listed in Method LM25 for semivolatiles in a soil matrix is 14 days from date sampled to extraction date. The analytical holding time criterion listed in Method LM25 for soil matrices is 40 days from extraction date to date of analysis. All soil samples were extracted within seven days of sampling and analyzed within seven days of extraction.

### 2.0 GC/MS Instrument Performance Check: ACCEPTABLE/All criteria met.

DFTPP was analyzed at the beginning of each twelve hour analytical sequence as required. All DFTPP data were provided, and all results were within the specified control limits.

# 3.0 Initial and Daily Calibration: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table

#### Discussion:

The initial calibration was performed at the proper frequency. Six standards were used, meeting USATHAMA PAM 11-41 criterion for Class 1A. Relative response factors (RRF) and percent relative standard deviation (%RSD) values were verified by recalculation. No calculation or transcription errors were noted. During data assessment, only positive results in the associated samples would be qualified on the basis of outlying curve linearity (indicated by %RSD values above 30%). All positive results were associated with acceptable compound curves. No action required.

Several compounds (heptachloroepoxide, chlordane and endosulfan II) had RRF values below the 0.05 lower control limit. These compounds are not consistently recoverable using GCMS methods, and historically have very low response factors. However, these compounds had acceptable %RSD values, indicating a stable response, and all RRF values were above 0.01. No action was taken.

Four compounds (PCB-1016, PCB-1260, PCB-1262, and toxaphene) were not included in the initial calibration, any daily calibration, and were not part of the list of compounds scanned for in any sample. These compounds were reported on the transfer files as LT (less than) values, with no laboratory flags. As these compounds were not scanned for (except as unknown compounds), the reporting limits (CRL) are rejected (R).

Continuing calibrations (CCAL) were run at the correct frequency (before and after sample analyses). All daily calibrations met the Method LM25 criteria. All of the CCAL had compounds with percent difference (%D) values greater than the ±25% control limits. A list of all %D outliers is in the Data Quality Assessment Worksheet. All positive compound results

associated with an outlying %D value are estimated (J). For non-detects associated with %D outliers, the detection limits (CRL) were judged not significantly affected, with the exception of the hexachlorocyclopentadiene and 4,6-dinitro-2-methylphenol detection limits. These compounds had a %D values greater than 50% in the second CCAL. A %D value greater than 50% indicates a significant loss of instrument sensitivity. As all sample analyses are associated with this CCAL, all detection limits for these compounds are estimated (UJ). One other compound (2,4-dinitrophenol) had a %D value of 53% in the final CCAL. The 2,4-dinitrophenol detection limits in the samples associated with this CCAL are estimated (UJ). All other %D values were acceptable.

4.0 Blank Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table

#### Discussion:

A method blank was analyzed at the required frequency. One phthalate ester (di-n-butyl phthalate) was detected at a level below the CRL in the method blank. Several unknown compounds were also detected. A list of all compounds detected in the method blank is in the Data Quality Assessment Worksheet. Action levels were established at ten times the concentration in the blank. Di-n-butyl phthalate was detected in two samples at concentrations below the action level. These results were qualified as not detected (U) at the reported levels. Unknown compounds that were detected in the samples at concentrations less than the action levels were rejected (R). The unknown compounds were verified using the scan number, retention times, and a comparison of the mass spectra.

No field or equipment blanks were submitted with this lot.

5.0 Surrogate Recovery: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Surrogate compound percent recoveries (%R) were reviewed by recalculation. See the Data Quality Assessment Worksheets for examples of surrogate calculations. The upper and lower surrogate percent recovery limits from the control charts in the DataChem QA Status Report are based upon a standard matrix (ASTM Type II water) surrogate quality control spike. There are no control charts for field sample (natural matrix) surrogate recovery. For data assessment purposes, the surrogate percent recoveries were compared to the limits specified in the three day moving average percent recovery control charts in the DataChem QA Status Report, and the surrogate recovery limits specified in the EPA Contract Laboratory Program (CLP) 3/90 Statement Of Work (SOW). The CLP SOW does not specify recovery limits for two of the USATHAMA-specified surrogate compounds, di-n-octyl phthalate-d4 and diethylphthalate-d4. For these compounds, a recovery range of 20% to 130% was used to assess the field sample

results. The range is the same as the range recommended in the CLP SOW for new surrogate compounds.

One surrogate standard (di-n-octyl phthalate-d4) had percent recovery values above the 130% upper control limit (UCL) criterion in all samples and QC analyses. No data qualifiers are recommended unless two or more semivolatile surrogates within the same fraction (acid or base/neutral) are outside the control limits. No action was taken. Sample PPB-94-03A also had a high recovery for diethyl phthalate-d4 (134%). As the phthalate surrogates are not EPA CLP 3/90 SOW surrogates and the recovery ranges are only recommended, and as all other surrogate recoveries were acceptable, no action was taken. All other surrogate recoveries were within the limits specified by the EPA CLP 3/90 SOW. For surrogate compounds not specified in the EPA CLP 3/90 SOW, all other recoveries fell within the 20% to 130% recovery range.

In the 14 field and QC sample analyses, 14 analyses each had from one to four percent recovery values outside the acceptance range specified in the DataChem QA Status Report control charts. The samples and the surrogate outliers are listed in the Data Quality Assessment Worksheet. As the surrogate percent recoveries met the CLP limits (except as noted above), and as the surrogate recoveries were not significantly outside the control chart limits, no qualifiers were issued to the samples based on control chart surrogate percent recovery outliers.

# 6.0 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample Analyses: ACCEPTABLE/All criteria met.

MS/MSD analyses were submitted with lot ANUH. MS/MSD analyses were performed using Sample PPB-94-03A. All percent recovery (%R) values are within 80% to 120%, indicating an acceptable degree of accuracy. All relative percent difference (RPD) values are less than 15%, indicating an acceptable degree of precision.

## 7.0 Field Duplicates: ACCEPTABLE/All criteria met.

Two samples were submitted as a field duplicate set (BRP-94-09C and BRP-94-18C). Relative percent difference (RPD) values were calculated for all positive results detected in both samples. Field precision is considered acceptable on the basis of low RPD values (<30%). Two other samples (BRP-94-18A and BRP-94-18B) were listed as field duplicates. However, the replicates of these samples were not included as part of Lot ANUH. An assessment of field precision could not be made for those samples.

#### 8.0 Internal Standards Performance: ACCEPTABLE/With the following exceptions.

**Qualified Data:** See Qualified Data Summary Table.

#### Discussion:

Analysis of areas and retention times for internal standards was conducted (see Data Quality Assessment Worksheets). No quality control criteria for internal standards are specified in USATHAMA PAM 11-41 or the laboratory method. For data assessment purposes, the criteria from U.S. EPA National Functional Guidelines was used to assess the internal standards.

Several samples had from one to five internal standards with areas below the lower control limit (50% of the continuing calibration internal standard area). All analyses had low areas for the last internal standard, perylene-d12. A list of the internal standard outliers, and a list of the associated target compounds are in the Data Quality Assessment Worksheets. All positive results associated with a non-compliant internal standard are estimated (J). For non-detected compounds, the detection limits (CRL) are estimated (UJ).

All other internal standard areas were within the acceptance window of 50% to 200% of the continuing calibration internal standard area. All other retention times were within  $\pm 30$  seconds of the continuing calibration internal standard retention time.

# 9.0 Compound Identification: ACCEPTABLE/All criteria met.

All compound identifications were reviewed and are found to be acceptable.

# 10.0 Compound Quantitation and Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

Target compound quantitation were recalculated using the method described in the CLP SOW, with results similar to those reported by the laboratory. The compound quantitations were judged to be acceptable. The reported CRL met those listed in Method LM25. No transcription errors were found.

11.0 Unknown Compounds: ACCEPTABLE/With the following qualification.

Qualified Data: See Section 4.0. All other unknown compounds were qualified JN.

#### Discussion:

Mass spectral library searches to identify unknown (non-target) compounds were performed as required, and all reported identifications were acceptable. As discussed in Section 4.0, unknown compounds in a sample that were also detected in the associated method blank were rejected (R). All other unknown compounds are qualified as estimated with tentative identification (JN).

As discussed in Section 3.0, PCB compounds were not calibrated or scanned for during the analysis. The PCB results on the transfer file were either reported as ND with an 'R' flag by the laboratory, or were rejected during the Data Quality Assessment. For one sample (BRP-94-18A), PCB compounds were reported as the tentative identification for many of the unknown

(non-target) compound peaks. As specified by USATHAMA PAM 11-41, the PCB compounds were reported on the transfer file as UNKxxx, where xxx is a three digit number. Due to the limitations of the calibration and the GCMS detector, these PCB compounds cannot be identified as unique isomers, and cannot be accurately quantitated. However, the presence of PCB compounds in this sample indicates that multiple PCB isomers could be present in high concentrations. The identification should be qualitative (PCB compounds are present), and the reported concentrations should be considered gross estimates.

# **12.0** System Performance: ACCEPTABLE/All criteria met.

No signs of degraded instrument performance were observed. The analytical systems were judged to have been in tune, within control, and stable during the course of these analyses.

#### 13.0 OVERALL ASSESSMENT/QC SUMMARY

Based on this evaluation, the laboratory followed the specified analytical method.

Accuracy is acceptable, as demonstrated by the %R values of most of the surrogate and matrix spike recoveries. Precision is acceptable on the basis of MS/MSD RPD values.

The DataChem QC Status report notes the following trends were found in Lot ANUH: terphenyl-d14 recoveries are trending below the mean, and 2-chlorophenol-d4, 2-fluorobiphenyl, 2-fluorophenol, diethyl phthalate-d4, nitrobenzene-d5 and phenol-d6 recoveries were going in a downward direction. The individual outliers listed were a high recovery for diethyl phthalate-d4, and a low recovery for phenol-d6. The DataChem QA Status Report recommends that Lot ANUH be accepted. The USAEC Control Chart Response letter accepts Lot ANUH with no comments. The above noted trends and outliers have no significant impact upon the reported data, other than is discussed in this Data Quality Assessment Report.

PCB compounds were detected as unknown compounds in Sample BRP-94-18A. The PCB compounds were reported on the transfer file as UNKxxx, where xxx is a three digit number. As discussed in Section 3.0, the PCB isomers reported as target compounds on the transfer file were either flagged 'R' by the laboratory or were rejected during the Data Quality Assessment. Due to the limitations of the calibration and the GCMS detector, these PCB compounds cannot be identified as unique isomers, and cannot be accurately quantitated. However, the presence of PCB compounds in this sample indicates that multiple PCB isomers could be present in high concentrations. The identification should be qualitative (PCB compounds are present), and the reported concentrations should be considered gross estimates.

Data qualifiers were assigned due to calibration outliers, low internal standard areas, and blank contamination. Unknown (non-target) compounds were qualified JN.

Data that are rejected are unusable for any purpose. All other data, as qualified, are acceptable for use.

# Qualified Data Summary Table Lot No: ANUH

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
di-n-butylphthalate	DNBP	U	BRP-94-18A		< Action Level	Section 4
di-n-butylphthalate	DNBP	U	BRP-94-08A		< Action Level	
UNK530	UNK530	R	PPB-94-03A	0.4		4
UNK643	UNK643	R	PPB-94-03A	0.4		4
UNK642	UNK642	R	PPB-94-03B	`		4
UNK643	UNK643	R	PPB-94-03C	0.5	< Action Level < Action Level	4
UNK642	UNK642	R	PPS-94-05			4
UNK642	UNK642	R	BRP-94-09C		< Action Level	4
UNK642	UNK642	R	BRP-94-18A		< Action Level	4
UNK642	UNK642	R	BRP-94-18B	<del></del>	< Action Level	4
UNK642	UNK642	R	BRP-94-18C		< Action Level	4
UNK642	UNK642				< Action Level	4
UNK643		R	BRP-94-08A		< Action Level	4
UNK043	UNK643	R	BRP-94-08B	0.3	< Action Level	4
hexachlorocyclopentadiene	CL6CP		ALL CASSIES	lan	00 10/5	
		UJ	ALL SAMPLES	CRL = 0.52	CCal %D > 50%	3
4,6-dinitro-2-methylphenol 2,4-dinitrophenol	46DN2C	N)	ALL SAMPLES	CRL = 0.8	CCal %D > 50%	3
2,4-dinitrophenol	24DNP		BRP-94-08A	CRL = 4.7	CCal %D > 50%	
2,4-dinitrophenol	24DNP	UJ	BRP-94-08B	CRL = 4.7	CCal %D > 50%	
	24DNP	UJ	BRP-94-08C	CRL = 4.7	CCal %D > 50%	.
benzyl alcohol	BZALC	J	PPB-94-03A		CCal %D > 25%	3
benzyl alcohol	BZALC	J	PPB-94-03B		CCal %D > 25%	3
benzyl alcohol	BZALC	J	PPS-94-05		CCal %D > 25%	3
benzyl alcohol	BZALC	J	BRP-94-09C		CCal %D > 25%	3
benzyl alcohol	BZALC	ı	BRP-04-18C		CCal %D > 25%	3
benzyl alcohol	BZALC	J	BRP-94-08A		CCal %D > 25%	3
benzyl alcohol	BZALC	J	BRP-94-08B	0.051	CCal %D > 25%	3
Benzo(k)fluoranthene	BKFANT	J	BRP-94-18A	0.17	CCal %D > 25%	3
PCB 1016	PCB016	R	All Samples	CRL = 0.32	Analytes not scanned	3
PCB 1260	PCB260	R	All Samples	CRL = 0.79	Analytes not scanned	3
PCB 1262	PCB262	R	All Samples	CRL = 6.3	Analytes not scanned	3
toxaphene	TXPHEN	R	All Samples	CRL = 12	Analytes not scanned	3
		· · · · · · · · · · · · · · · · · · ·				
1,2,3-trichlorobenzene	123TCB	υJ	PPB-94-03A		Low area in	8
1,2,4-trichlorobenzene	124TCB	บา	PPB-94-03A		associated I.S.	8
2,4-dichlorophenol	24DCLP	กา	PPB-94-03A	0.065	(naphthalene-d8)	8
2,4-dimethylphenol	24DMPN	UJ	PPB-94-03A	3		. 8
2-methyl naphthalene	2MNAP	กา	PPB-94-03A	0.032		8
2-nitrophenol	2NP	ΠΊ	PPB-94-03A	1.1		8
3-nitrotoluene	3NT	บา	PPB-94-03A	0.34		8
4-chloroaniline	4CANIL	ΠΊ	PPB-94-03A	0.63		8
benzoic acid	BENZOA	กา	PPB-94-03A	3.1		8
bis(2-chloroethoxy)methane	B2CEXM	UJ	PPB-94-03A	0.19		8
dibromochloropropane	DBCP	UJ	PPB-94-03A	0.071		8
hexachlorobutadiene	HCBD	UJ	PPB-94-03A	0.97		8
sophorone	ISOPHR	N	PPB-94-03A	0.39		8
naphthalene	NAP	ſIJ	PPB-94-03A	0.74		8
nitrobenzene	NB		PPB-94-03A	1.8		8
o-chloro-m-cresol	4CL3C		PPB-94-03A	0.93		8
o-chlorphenylmethyl sulfide	CPMS		PPB-94-03A	0.097		8
vapona	DDVP		PPB-94-03A	0.068		8

# Qualified Data Summary Table Lot No: ANUH

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
1,3-dinitrobenzene	13DNB	UJ	PPB-94-03A		Low area in	8
2,3,6-trichlorophenol	236TCP	UJ	PPS-94-05		associated I.S.	8
2.4.5-trichlorophenol	245TCP	บบ	1		(acenaphthene-d10)	8
2,4,6-trichlorophenol	246TCP	บา	1	0.061	(decinapitatione dire)	8
2,4-dinitrophenol	24DNP	UJ	-{	4.7		8
2,4-dinitrotoluene	24DNT	บัง	1	1.4		8
2.6-dinitrotoluene	26DNT	UJ	1	0.32		8
2-chloronaphthalene	2CNAP	UJ	┪	0.24	•	8
2-nitroaniline	2NANIL	UJ		3.1		8
3-nitroaniline	3NANIL	บา	1	3		8
4-chlorophenylphenyl ether	4CLPPE	UJ		0.17		8
4-nitroaniline	4NANIL	UJ		3.1		8
4-nitrophenol	4NP	UJ	-	3.3		8
acenaphthene	ANAPNE	UJ	-	0.041		8
	ANAPYL	UJ	4	0.033		8
acenaphthylene dibenzofuran	DBZFUR	UJ	-	0.033		°
diethylphthalate	DEP	IUJ	1	0.38		8
dimethylphthalate	DMP	UJ	4	0.063		
	FLRENE	UJ	-			8
fluorene hexachlorocyclopentadiene	CL6CP	UJ	1	0.065		8
p-chlorophenylmethyl sulfone	CPMSO2	IUJ	-	0.066		8
p-chlorophenylmethylsulfoxide	CPMSO	UJ	1	0.32		8
fluoranthene	FANT	UJ	PPB-94-03A		Low area in	8
fluoranthene	FANT	J.	PPS-94-05		associated I.S.	8
fluoranthene	FANT	UJ	BRP-94-08C		( phenanthrene-d10)	8
1,2-diphenylhydrazine	12DPH	UJ	PPB-94-03A		Low area in	8
2,6-dinitroaniline	26DNA	UJ	PPS-94-05		associated I.S.	8
3,5-dinitroaniline	35DNA	UJ	BRP-94-08C		( phenanthrene-d10)	8
4,6-dinitro-2-cresol	46DN2C	UJ	DI 11 - 3 - 4 - 000	0.8	( prieriantinene-u ro)	8
4-bromophenylphenyl ether	4BRPPE	UJ		0.041		8
aldrin	ALDRN	UJ	1	1.3		8
alpha-BHC	ABHC	บัว		1.3		8
anthracene	ANTRC	UJ		0.71		8
atrazine	ATZ	UJ	İ	0.065		8
beta-BHC	BBHC	UJ		1.3		8
delta-BHC	DBHC	UJ		0.21		8
di-n-butylphthalate	DNBP	UJ		1.3		8
heptachlor	HPCL	UJ		0.24		8
heptachlor epoxide	HPCLE	nn		0.48		8
hexachlorobenzene	CL6BZ	UJ 03		0.08		8
sodrin	ISODR	UJ		0.48		8
indane	LIN	UJ		0.1		8
malathion	MLTHN	N1		0.18		8
N-nitrosodiphenylamine	NNDPA	nn nn		0.18		8
parathion	PRTHN	UJ		1.7		8
pentachlorophenol	PCP	UJ		0.76		8
phenanthrene	PHANTR	UJ		0.032		8
7110110110110110	SUPONA	UJ		0.92		8

# Qualified Data Summary Table Lot No: ANUH

						Report
Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Section
3,3'-dichlorobenzidine	33DCBD	กา	PPB-94-03A		Low area in	8
4,4'-DDD	PPDDD	UJ	PPS-94-05	0.064	associated I.S.	8
4,4'-DDE	PPDDE	UJ	BRP-94-08B	0.068	(chrysene-d12)	8
4,4'-DDT	PPDDT	UJ	BRP-94-08C	0.1		8
benzo[a]anthracene	BAANTR	Πη		0.041		8
bis(2-ethylhexyl)phthalate	B2EHP	บา	1	0.48	1	8
butylbenzylphthalate	BBZP	เกา	]	1.8		8
chlordane	CLDAN	UJ	1	0.68		8
chrysene	CHRY	UJ	1	0.032		8
dieldrin	DLDRN	UJ	]	0.079	1	8
endosulfan I	AENSLF	UJ		0.4	1	8
endosulfan II	BENSLF	UJ	1	2.4		8
endosulfan sulfate	ESFS04	UJ	1	1.2		8
endrin	ENDRN	UJ	1	1.3		8
endrin aldehyde	ENDRNA	UJ	1	1.8	İ	8
endrin ketone	ENDRNK	UJ	1	0.28	1	8
famphur	FAMPHR	UJ	1	1.3		8
kepone	KEP	UJ	1	1.3		8
methoxychlor	MEXCLR	UJ	1	0.26		8
pyrene	PYR	UJ		0.083		8
benzo[a]pyrene	BAPYR	UJ	All Samples	1.2	Low area in	8
benzo[b]fluoranthene	BBFANT	UJ	except	0.31	associated I.S.	8
benzo[ghi]perylene	BGHIPY	UJ	BRP-94-18A	0.18	(perylene-d12)	8
benzo[k]fluoranthene	BKFANT	UJ		0.13		8
di-n-octylphthalate	DNOP	UJ	1	0.23		8
dibenzo[a,h]anthracene	DBAHA	UJ		0.31		8
indeno[1,2,3,cd]pyrene	ICDPYR	UJ	1	2.4		8
mirex	MIREX	UJ		0.14		8
benzo[a]pyrene	BAPYR	UJ	BRP-94-18A	1.2	Low area in	8
benzo[b]fluoranthene	BBFANT	J	1	0.38	associated I.S.	8
benzo(ghi)perylene	BGHIPY	J		0.2	(perylene-d12)	8
benzo[k]fluoranthene	BKFANT	J	1	0.17		8
di-n-octylphthalate	DNOP	UJ	1	0.23		8
dibenzo[a,h]anthracene	DBAHA	UJ	1	0.31		8
indeno[1,2,3,cd]pyrene	ICDPYR	UJ	1	2.4		8
mirex	MIREX	UJ	1	0.14		8

**Environmental Science and Chemistry** 

# **DATA QUALITY ASSESSMENT**

# TOOELE ARMY DEPOT—NORTH AREA DAAA15-90-D-0007, TASK 0003

# SWMU 35 WASTEWATER SPREADING AREA

# Prepared for:

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December 20, 1994

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# DATA QUALITY ASSESSMENT SUMMARY

# Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on soil and water samples and associated laboratory quality control samples. Refer to the Sample Index for sample identifications.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Primary	Secondary
SWMU 35	Pesticides	ANHJ	LH17 (SOIL)	Marcia Bender	Eric Strout
	Pesticides	ANWT	UH20 (WATER)	Marcia Bender	Eric Strout
	Explosives	ANRS	UW25 (WATER)	Mark T. Brindle	Eric Strout

Data assessment was based on the QC criteria recommended in the above listed method; the Tooele Army Depot—North Area QC Plan; USEPA Functional Guidelines for Organic and Inorganic Data Review; and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

Copies of the qualified transfer files are included as Appendix A. Each lot report also contains a summary table of qualified results. Data Quality Assessment Worksheets, Communication, and Corrective Action Records have been placed in labeled envelopes with the original data packages.

# **DATA VALIDATION QUALIFIER CODES**

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.
R	Unreliable result. Data should not be used. Analyte may or may not be present in the sample.

J Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality Assessment Report should be consulted for reason.

UJ Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report should be consulted for reason.

#### SITE DATA QUALITY SUMMARY SWMU 35 WASTEWATER SPREADING AREA

#### **Pesticides**

One lot of pesticide analyses of water samples using Method UH20 was reviewed. All results were acceptable for use without qualification, except for endosulfan I. As noted by the USAEC, the low spike recovery for endosulfan I was low. The associated detection limits were estimated (UJ) due to possible low bias.

One lot of pesticide analyses of soil samples using Method LH17 was reviewed. The DataChem QA Status Report notes that almost all recoveries in the QC spike are above the control limits. The laboratory states that this is due to a cracked vial, which allowed some of the solvent to evaporate, concentrating the sample. The laboratory also noted that the recoveries obtained during the sample screening (performed prior to the solvent loss) were acceptable, as were the recoveries of standards and MS/MSD compounds. The laboratory flagged all associated data "H". The USAEC accepted the lot, and flagged all associated data with "M" flags. As the high recoveries are a one time occurrence due to an isolated incident, the high recoveries were judged to have no significant impact on the reported results, and no data qualifiers were issued during the Data Quality Assessment.

Qualifications were issued to seven samples due to the suspected presence of technical chlordane. As chlordane was not reported, the possibility of false negatives exists, and the chlordane CRL were qualified as not usable (R) in the affected samples. As the multi-component peaks of technical chlordane would mask other analytes, resulting in elevated detection limits and possible false positive results, all other analytes in the affected samples were estimated (J/UJ).

#### **Explosives**

One lot of explosives analyses of water samples using Method UW25 was reviewed. The laboratory flagged all RDX results as "7' due to poor recovery of the high concentration spike. All RDX data (all non-detects) were qualified as estimated at the detection limit. Qualifiers were assigned to 2,4-dinitrotoluene and nitrobenzene CRL in one sample (WW-1) due to poor MS/MSD precision. The MS/MSD analyses are not required by the USAEC program, but are required for the assessment of sites within the State of Utah.

# DATA QUALITY ASSESSMENT EXPLOSIVES ANALYSES: WATER METHOD: UW25

LOT: ANRS

# I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANRS were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package. DataChem QA Status Reports and USAEC Control Chart Response were submitted. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: Changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and chromatograms were signed and dated by the analyst.

## II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in Lot ANRS. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for each sample in Lot ANRS. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field IDs and laboratory IDs for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

## III. FIELD QUALITY CONTROL

Sample 3ER-38 from Lot ANRS was identified as field quality control sample on the chain-of-custody forms. One compound (1,3,5-trinitrobenzene) was detected in the field rinsate blank at a concentration of  $0.45 \,\mu\text{g/L}$ , slightly above the certified reporting limit of  $0.21 \,\mu\text{g/L}$ . Since 1,3,5-trinitrobenzene was detected in no other field sample in Lot ANRS, no action was taken.

Samples WW-1 and WW-1 DUP were identified on the chain-of-custody forms as field duplicate samples. Target compounds were not detected in either sample. Field duplicate precision was not evaluated.

#### IV. TECHNICAL ASSESSMENT

# **1.0** Holding Times: ACCEPTABLE/All criteria met.

All water samples in Lot ANRS were extracted within three days of collection and were analyzed within 16 days of extraction. The seven-day extraction holding time and 40-day analysis holding time limits were met.

#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

The appropriate number of calibration standards were used to generate a zero-intercept model standard curve for explosives compounds. Linearity was acceptable for the standard curves. Recalculation results of the regression statistics for the curves agreed with the laboratory values.

## 3.0 Daily Calibration: ACCEPTABLE/All criteria met.

The results of the daily calibration standard agreed with the initial calibration standard within 25%.

# 4.0 Blank Analysis: ACCEPTABLE/All criteria met.

One water method blank was associated with the samples in Lot ANRS. Target compounds were not detected in the method blank at or above the certified reporting limit (CRL).

# **5.0 Matrix Spike/Matrix Spike Duplicate Analyses:** ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table ANRS-1.

#### Discussion:

The laboratory used Sample WW-1 for MS/MSD analyses with the samples from Lot ANRS. The RDX percent recovery value of 30% in the MSD sample was less than the lower control limit of 70%. The relative percent difference values for 2,4-dinitrotoluene, nitrobenzene, and RDX were greater than the upper control limit for precision of 20%. The detection limits (CRL) for 2,4-dinitrotoluene, nitrobenzene, and RDX in the associated unspiked sample, WW-1, were qualified as estimated, (UJ).

All other percent recovery values were within control limits of 70% to 130%. All other relative percent difference values were less than the maximum allowable value of 20%.

# 6.0 High Spike and Low Spike Recovery: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table ANRS-1.

#### Discussion:

The DataChem QA Status Report noted that the recovery values for RDX were less than the lower control limit in the high spike analysis. The QA Status Report recommends that the data for Lot ANRS be accepted with a flagging code of "7" for all RDX data. The reviewer concurs with the recommendation and has qualified all RDX detection limits as estimated, (UJ).

# 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data for Lot ANRS were reviewed for explosives compounds; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

# 8.0 Compound Quantitation and Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

An evaluation of compound quantitation was performed by recalculating the sample results from the raw data. Discrepancies were not found. The CRL on the transfer file met those listed in the method. No transcription errors were noted.

# 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

## V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method.

An examination of the DataChem QA Status Report that includes Lot ANRS revealed the following items: RDX results in the high spike were below the lower control limit.

All RDX detection limits were qualified as estimated (UJ) due to high spike accuracy deficiencies. Qualifiers were issued to the 2,4-dinitrotoluene and nitrobenzene CRL in Sample WW-1 because of poor MS/MSD precision.

All data, as qualified, are acceptable for use.

# Qualified Data Summary Table Lot No: ANRS-1

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
RDX	RDX	UJ	3ER-38	LT 4.16E-1	HS%R <lcl< td=""><td>6.0</td></lcl<>	6.0
RDX	RDX	ΩJ	WW-1	LT 4.16E-1	HS%R <lcl< td=""><td>6.0</td></lcl<>	6.0
RDX	RDX	UJ	WW-1 DUP	LT 4.16E-1	HS%R <lcl< td=""><td>6.0</td></lcl<>	6.0
RDX	RDX	UJ	WW-1	LT 4.16E-1	MS/MSD %R & RPD out	5.0
2,4-Dinitrotoluene	24DNT	UJ	WW-1		MS/MSD RPD > UCL	5.0
Nitrobenzene	NB	UJ	WW-1		MS/MSD RPD > UCL	5.0

# DATA QUALITY ASSESSMENT

PESTICIDE ANALYSES: SOIL
METHOD: LH17
LOT NO.: ANHJ

### I. DELIVERABLES AND DOCUMENTATION

Method LH17 analyzes for pesticides/PCB compounds. Only organochlorine pesticide analyses were requested, so a modified method LH17 was performed. No PCB compounds were reported. All necessary documentation for lot ANHJ were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed. Transfer files, the DataChem QA Status Report, and USAEC Control Chart Response were also provided.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; all laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in lot ANHJ. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions. All samples listed on field chain-of-custody forms were analyzed, with the exception of one equipment rinsate sample, 3ER-33. This sample was not included with lot ANHJ.

Laboratory chain-of-custody forms were present and complete for each sample in lot ANHJ. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field ID and laboratory ID for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. Discrepancies were not found.

#### III. FIELD QUALITY CONTROL

Sample WSS-94-16 was identified on the field chain-of-custody form as a field duplicate of Sample WSS-94-09. Gamma-BHC, 4,4'-DDE, and 4,4'-DDT were detected in both samples. Relative percent difference (RPD) values of less than 25% were calculated for these analytes, indicating acceptable precision. Heptachlor epoxide was detected just above the detection limit in Sample WSS-94-16 only. As the RPD between this detected value and the detection limit reported for the original sample is also less than 25%, no action was taken. No qualification was

necessary. Sample 3ER-33 was identified on the field chain-of-custody form as a field equipment rinsate sample, but was not analyzed as part of lot ANHJ. No other field QC samples were identified.

### IV. TECHNICAL ASSESSMENT

# 1.0 Holding Times: ACCEPTABLE/All criteria met.

All soil samples were extracted within two days of collection and were analyzed within 20 days of extraction. The USATHAMA PAM 11-41-required extraction holding time limit of seven days and analysis holding time of 40 days were met.

#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

The appropriate number of calibration standards were used to generate a zero-intercept model standard curve for pesticide compounds. Linearity was acceptable for the standard curves. Recalculation results of the regression statistics for the curves agreed with the laboratory values.

# 3.0 Daily Calibration: ACCEPTABLE/All criteria met.

The results of the daily calibration standard agreed with the initial calibration standard within 25%. Percent difference (%D) values for pesticide compounds were reported by the laboratory. All %D values were within control limits.

# 4.0 Blank Analysis: ACCEPTABLE/All criteria met.

One method blank was associated with the samples in this lot. Target and non-target pesticide compounds were not detected in the method blank at or above the certified reporting limit (CRL).

# 5.0 Matrix Spike / Matrix Spike Duplicate Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

The laboratory performed MS/MSD analyses at a frequency of one pair per 20 samples. MS/MSD analysis was performed on Sample WSS-94-05. Percent recovery (%R) and relative percent difference (RPD) values for pesticide compounds were evaluated. All analytes with associated acceptance criteria were within USEPA control limits for %R and RPD, with the exception of the %R value for 4,4'-DDT in both the matrix spike and the matrix spike duplicate samples. The 4,4'-DDT %R values were above the upper control limit. The elevated recoveries were caused by matrix interference. No action was taken. Two compounds (endosulfan I and methoxychlor) were also included in the spike solution. There are no USEPA control limits for these compounds. The %R and RPD values were judged acceptable.

6.0 High Spike Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Two high concentration spike analyses were performed with sample lot ANHJ. One analysis was spiked with technical chlordane, the other with a mixture of individual target compound pesticides. The percent recovery of the technical chlordane was below the lower control limit. The percent recoveries of individual pesticide analytes were all above the upper control limit. The laboratory attributes the high recoveries to accidental concentration, due to a crack in the sample vial that allowed solvent evaporation. Results from the sample screening performed prior to concentration show the QC values within limits, and comparable field sample values to those achieved during sample analysis. Also, the standard and MS/MSD analyses had acceptable results. The elevated %R values in the high concentration spike analysis were judged to be a one time occurrence, and had no impact on the reported sample results. No data qualifiers were issued.

7.0 Compound Identification: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualifier Table.

#### Discussion:

The chromatograms and raw data for lot ANHJ were reviewed for organochlorine pesticide compounds. In seven samples, chlordane was reported as not detected, and two individual chlordane isomers (alpha and gamma chlordane) were reported as positive results. A review of the chromatograms indicated the possible presence of technical chlordane, a multi-component compound with many eluting peaks which reflect the many chlordane isomers. Notes made by the analyst on the raw data (and repeated in the data package case narrative) state that the presence of technical chlordane was suspected by the analyst for these samples.

As the presence of technical chlordane is suspected, the reported non-detect for chlordane represents a possible false negative result. For this reason, the chlordane detection limit (CRL) is qualified as unusable (R) in the seven samples, as summarized in the Qualified Data Summary Table.

# 8.0 Compound Quantitation and Certified Reporting Limit (CRL):

ACCEPTABLE/ With the following exceptions.

Qualified Data: See Qualifier Table.

#### Discussion:

As discussed in Section 7.0, the presence of technical chlordane was suspected in seven samples. As technical chlordane is a multi-component analyte with many peaks, the presence of technical chlordane can mask other analytes which have similar elution times. This interference results in

elevated detection limits, and an increased possibility of false positive identifications. Due to this, all target analytes in the affected samples are estimated (J/UJ).

Compound quantitation was reviewed by recalculation; no errors were noted. The CRL on the transfer file met those listed in the method. No transcription errors were found.

Several compounds that are not method LH17 target compounds were included during the analyses. These compounds were correctly flagged "T" (for non-detects) or "Z" (for positive results) by the laboratory. No action was required.

### 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

#### V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. Accuracy was acceptable, based upon the percent recovery values for most of the spiked analytes. Precision was acceptable, based upon the low RPD values for the MS/MSD and field duplicate sets.

The DataChem QA Status Report notes that almost all recoveries in the QC spike are above the control limits. The laboratory states that this is due to a cracked vial, which allowed some of the solvent to evaporate, concentrating the sample. The laboratory also noted that the recoveries obtained during the sample screening (performed prior to the solvent loss) were acceptable, as were the recoveries of standards and MS/MSD compounds. The laboratory flagged all associated data "H". The USAEC accepted the lot, and flagged all associated data with "M" flags. As the high recoveries are a one time occurrence due to an isolated incident, the high recoveries were judged to have no significant impact on the reported results, and no data qualifiers were issued during the Data Quality Assessment.

Qualifications were issued to seven samples due to the suspected presence of technical chlordane. As chlordane was not reported, the possibility of false negatives exists, and the chlordane CRL were qualified as not usable (R) in the affected samples. As the multi-component peaks of technical chlordane would mask other analytes, resulting in elevated detection limits and possible false positive results, all other analytes in the affected samples were estimated (J/UJ).

Data that are rejected (R) are not usable for any purpose. All other data, as qualified, are acceptable for use.

Analyte	Code	Qualifier	Sample ID	Conc(ug/g)	Reason	Report Section
Chlordane (Tech)	CLDAN	R	WSS-94-01	LT 6.84E-2	False negative	7
Chlordane (Tech)	CLDAN	R	WSS-94-03	LT 6.84E-2	False negative	7
Chlordane (Tech)	CLDAN	R	WSS-94-06	LT 6.84E-2	False negative	7
Chlordane (Tech)	CLDAN	R	WSS-94-07	LT 6.84E-2	False negative	7
Chlordane (Tech)	CLDAN	R	WSS-94-08	LT 6.84E-2	False negative	7
Chlordane (Tech)	CLDAN	R	WSS-94-09	LT 6.84E-2	False negative	7
Chlordane (Tech)	CLDAN	R	WSS-94-16	LT 6.84E-2	False negative	7
	ABHC	UJ	WSS-94-01	LT 2.80E-3	Uncertain detection limit	8
	AENSLF	UJ	WSS-94-01	LT 1.00E-3	Uncertain detection limit	8
	ALDRN	UJ	WSS-94-01	LT 1.4E-3	Uncertain detection limit	8
	ВВНС	UJ	WSS-94-01	LT 7.70E-3	Uncertain detection limit	8
	BENSLF	UJ	WSS-94-01	LT 7.00E-4	Uncertain detection limit	8
	DBHC	UJ	WSS-94-01	LT 8.50R-3	Uncertain detection limit	8
	DLDRN	J	WSS-94-01		Possible False Positive	8
	ENDRN	J	WSS-94-01		Possible False Positive4505	1
	HPCL	UJ	WSS-94-01	LT 2.20E-3	Uncertain detection limit	8
	HPCLE	UJ	WSS-94-01	LT 1.30E-3	Uncertain detection limit	8
	ISODR	UJ	WSS-94-01	LT 3.00E-3	Uncertain detection limit	8
	LIN	UJ	WSS-94-01	LT 1.00E-3	Uncertain detection limit	8
	MEXCLR	UJ	WSS-94-01	LT 3.59E-2	Uncertain detection limit	8
	PPDDD	J	WSS-94-01		Possible False Positive	8
	PPDDE	J	WSS-94-01		Possible False Positive	8
	PPDDT	J	WSS-94-01		Possible False Positive	8
	TXPHEN	OJ .	WSS-94-01	LT 2.26E-1	Uncertain detection limit	8
	ENDRNA	UJ	WSS-94-01	ND 5.00E-4	Uncertain detection limit	8
	ENDRNK	UJ	WSS-94-01	ND 5.00E-4	Uncertain detection limit	8
	ESFS04	UJ	WSS-94-01	ND 5.00E-4	Uncertain detection limit	8
	ABHC	UJ 103	WSS-94-03	LT 2.80E-3	Uncertain detection limit	8
	AENSLF	J	WSS-94-03		Possible False Positive	8
	ALDRN	J	WSS-94-03		Possible False Positive	8
	ВВНС	luj	WSS-94-03	LT 7.70E-3	Uncertain detection limit	8
	BENSLF	J	WSS-94-03		Possible False Detection	8
	DBHC	J	WSS-94-03		Possible False Detection	8
	DLDRN	J	WSS-94-03		Possible False Detection	8
	ENDRN	J	WSS-94-03		Possible False Positive	8
	HPCL	UJ		LT 2.20E-3	Uncertain detection limit	8
	HPCLE	J	WSS-94-03		Possible False Positive	8
	ISODR	nn 2	WSS-94-03	LT 3.00E-3	Uncertain detection limit	8
	LIN	J	WSS-94-03	<del></del>	Possible False Positive	8
	MEXCLR	וח	WSS-94-03	LT 3.59E-2	Uncertain detection limit	8
	PPDDD	J	WSS-94-03	1	Possible False Positive	8
	PPDDE	J	WSS-94-03		Possible False Detection	8
		J	WSS-94-03		Possible False Positive	8
	PPDDT	ט	WSS-94-03		Uncertain detection limit	8
	TXPHEN	J	WSS-94-03		Possible False Positive	8
	ENDRNA	13	WSS-94-03		Possible False Positive	8
	ESFS04	J	WSS-94-03		Possible False Positive	8

Analyte	Code	Qualifier	Sample ID	Conc(ug/g)	Reason	Repor
· · · · · · · · · · · · · · · · · · ·	ABHC	UJ	WSS-94-06	LT 2.80E-3	Uncertain detection limit	1
	AENSLF	J	WSS-94-06		Possible False Detection	
	ALDRN	UJ	WSS-94-06	LT 1.40E-3	Uncertain detection limit	
	ВВНС	UJ	WSS-94-06	LT 7.70E-3	Uncertain detection limit	
	BENSLF	UJ	WSS-94-06	LT 7.00E-4	Uncertain detection limit	
	DBHC	UJ	WSS-94-06	LT 8.50E-3	Uncertain detection limit	1
······	DLDRN	UJ	WSS-94-06	LT 1.60E-3	Uncertain detection limit	
~~~~	ENDRN	J	WSS-94-06	·	Possible False Positive	
	HPCL	UJ	WSS-94-06	LT 2.20E-3	Uncertain detection limit	
	HPCLE	J	WSS-94-06		Possible False Positive	
	ISODR	UJ	WSS-94-06	LT 3.00E-3	Uncertain detection limit	
	LIN	UJ	WSS-94-06	LT 1.00E-3	Uncertain detection limit	1
	MEXCLR	UJ	WSS-94-06	LT 3.59E-2	Uncertain detection limit	
	PPDDD	J	WSS-94-06		Possible False Positive	8
	PPDDE	J	WSS-94-06		Possible False Positive	1
	PPDDT	J	WSS-94-06		Possible False Positive	- 8
	TXPHEN	UJ	WSS-94-06	LT 2.26E-1	Uncertain detection limit	1 8
	ENDRNA	UJ	WSS-94-06	ND 5.00E-4	Uncertain detection limit	1 8
	ENDRNK	UJ	WSS-94-06	ND 5.00E-4	Uncertain detection limit	8
	ESFS04	UJ	WSS-94-06	ND 5.00E-4	Uncertain detection limit	8
	ABHC	UJ	WSS-94-07	LT 2.80E-3	Uncertain detection limit	8
	AENSLF	J	WSS-94-07		Possible False Positive	8
*	ALDRN	UJ	WSS-94-07	LT 1.40E-3	Uncertain detection limit	8
	ВВНС	J	WSS-94-07		Possible False Positive	8
~~~	BENSLF	UJ	WSS-94-07	LT 7.00E-4	Uncertain detection limit	8
<del></del>	DBHC	J	WSS-94-07		Possible False Detection	8
	DLDRN	J	WSS-94-07		Possible False Detection	8
	ENDRN	J	WSS-94-07	<u> </u>	Possible False Positive	8
	HPCL	J	WSS-94-07		Possible False Detection	8
	HPCLE	J	WSS-94-07		Possible False Positive	
	ISODR	UJ	WSS-94-07	· · · · · · · · · · · · · · · · · · ·	Uncertain detection limit	8
	LIN	J	WSS-94-07		Possible False Positive	8
	MEXCLR	lun I	WSS-94-07			8
	PPDDD	J	WSS-94-07	1	Uncertain detection limit Possible False Positive	8
	PPDDE	J				1
	PPDDT	J	WSS-94-07		Possible False Positive	8
			WSS-94-07		Possible False Positive	8
	TXPHEN	UJ	WSS-94-07		Uncertain detection limit	8
	ENDRNA ENDRNK	J	WSS-94-07		Uncertain detection limit	8
	ESFS04	n n	WSS-94-07		Uncertain detection limit	8
			WSS-94-07		Uncertain detection limit	8
	ABHC		WSS-94-08		Uncertain detection limit	8
	AENSLF	+	WSS-94-08	<del></del>	Possible False Detection	8
·	ALDRN	<del></del>	WSS-94-08		Uncertain detection limit	8
	BBHC		WSS-94-08		Uncertain detection limit	8
****	BENSLF		WSS-94-08		Uncertain detection limit	8
	DBHC		WSS-94-08		Uncertain detection limit	8
	DLDRN	J	WSS-94-08	5.85E-03	Possible False Detection	8

Analyte	Code	Qualifier	Sample ID	Conc(ug/g)	Reason	Repor Section
	ENDRN	J	WSS-94-08	4.00E-02	Possible False Detection	
	HPCL	UJ	WSS-94-08	LT 2.20E-3	Uncertain detection limit	
	HPCLE	J	WSS-94-08	5.82E-03	Possible False Positive	
	ISODR	UJ	WSS-94-08	LT 3.00E-3	Uncertain detection limit	
· · · · · · · · · · · · · · · · · · ·	LIN	UJ	WSS-94-08	LT 1.00E-3	Uncertain detection limit	
	MEXCLR	UJ	WSS-94-08	LT 3.59E-2	Uncertain detection limit	
	PPDDD	UJ	WSS-94-08	LT 2.70E-3	Uncertain detection limit	
	PPDDE	J	WSS-94-08	2.11E-02	Possible False Positive	
	PPDDT	J	WSS-94-08	5.93E-03	Possible False Positive	
	TXPHEN	UJ	WSS-94-08	LT 2.26E-1	Uncertain detection limit	
	ENDRNA	UJ	W\$\$-94-08	ND 5.00E-4	Uncertain detection limit	
	ENDRNK	UJ	WSS-94-08	ND 5.00E-4	Uncertain detection limit	
	ESFSO4	UJ	WSS-94-08	ND 5.00E-4	Uncertain detection limit	1
	ABHC	UJ	WSS-94-09	LT 2.80E-3	Uncertain detection limit	
	AENSLF	UJ	WSS-94-09	LT 1.00E-3	Uncertain detection limit	1 8
	ALDRN	UJ	WSS-94-09	LT 1.40E-3	Uncertain detection limit	8
	BBHC	UJ	WSS-94-09	LT 7.70E-3	Uncertain detection limit	1
	BENSLF	UJ	WSS-94-09	LT 7.00E-4	Uncertain detection limit	1
	DBHC	UJ	WSS-94-09	LT 8.50E-3	Uncertain detection limit	1
	DLDRN	UJ	WSS-94-09	LT 1.60E-3	Uncertain detection limit	1
	ENDRN	UJ	WSS-94-09	LT 6.50E-3	Uncertain detection limit	
	HPCL	UJ	WSS-94-09	LT 2.20E-3	Uncertain detection limit	8
	HPCLE	UJ	WSS-94-09	LT 1.30E-3	Uncertain detection limit	1
	ISODR	UJ	WSS-94-09	LT 3.00E-3	Uncertain detection limit	
	LIN	UJ	WSS-94-09	LT 1.00E-3	Uncertain detection limit	
	MEXCLR	UJ	WSS-94-09	LT 3.59E-2	Uncertain detection limit	
	PPDDD	UJ	WSS-94-09	LT 2.70E-3	Uncertain detection limit	1
	PPDDE	J	WSS-94-09	5.90E-03	Possible False Positive	1
	PPDDT	J	WSS-94-09	5.03E-03	Possible False Positive	8
	TXPHEN	UJ	WSS-94-09	LT 2.26E-1	Uncertain detection limit	1
	ENDRNA	UJ	WSS-94-09	ND 5.00E-4	Uncertain detection limit	1
	ENDRNK	UJ	WSS-94-09	ND 5.00E-4	Uncertain detection limit	. 8
	ESFSO4	UJ	WSS-94-09	ND 5.00E-4	Uncertain detection limit	1
	ABHC	UJ	WSS-94-16	LT 2.80E-3	Uncertain detection limit	
	AENSLF	UJ	WSS-94-16		Uncertain detection limit	1
	ALDRN	UJ		LT 1.40E-3	Uncertain detection limit	
	ввнс	UJ		LT 7.70E-3	Uncertain detection limit	8
	BENSLF	UJ		LT 7.00E-4	Uncertain detection limit	8
	DBHC	UJ		LT 8.50E-3	Uncertain detection limit	
	DLDRN	UJ		LT 1.60E-3	Uncertain detection limit	8
	ENDRN	UJ		LT 6.50E-3	Uncertain detection limit	1
	HPCL	UJ	WSS-94-16	LT 2.20E-3	Uncertain detection limit	1
- · · · · · · · · · · · · · · · · · · ·	HPCLE	J	WSS-94-16		Possible False Positive	1
	ISODR	UJ			Possible False Positive	
	LIN	UJ -			Possible False Positive	
	MEXCLR	ŪJ	WSS-94-16	LT 3.59E-2	Uncertain detection limit	1
	PPDDD	UJ	WSS-94-16	LT 2.70E-3	Uncertain detection limit	

Analyte	Code	Qualifier	Sample ID	Conc(ug/g)	Reason	Report Section
	PPDDE	J	WSS-94-16	7.37E-03	Uncertain detection limit	8
	PPDDT	J	WSS-94-16	6.28E-03	Uncertain detection limit	8
	TXPHEN	ΠΊ	WSS-94-16	LT 2.26E-1	Uncertain detection limit	8
	ENDRNA	UJ	WSS-94-16	ND 5.00E-4	Uncertain detection limit	8
	ENDRNK	ΠΊ	WSS-94-16	ND 5.00E-4	Uncertain detection limit	8
	ESFSO4	ΠJ	WSS-94-16	ND 5.00E-4	Uncertain detection limit	8

# DATA QUALITY ASSESSMENT

PESTICIDE ANALYSES: WATER
METHOD: UH20

Lot No.: ANWT

#### I. DELIVERABLES AND DOCUMENTATION

Method UH20 is for pesticide/PCB analyses in water. Only the organochlorine pesticide analyses were requested, so a modified method UH20 was performed. All necessary documentation for lot ANWT were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package. Transfer files, the DataChem QA Status Report, and USAEC Control Chart Response were also provided. No final sample results were available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; all laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in lot ANWT. All submitted forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions. All water samples listed on the field chain-of-custody forms were analyzed, with the exception of one equipment rinsate sample, 3ER-40. Sample 3ER-40 was requested for PCB analysis only, and was not analyzed as part of Lot ANWT.

Laboratory chain-of-custody forms were present and complete for each sample in lot ANWT. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field ID and laboratory ID for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. Discrepancies were not found.

#### III. FIELD QUALITY CONTROL

Sample 3ER-42 was identified on the field chain-of-custody form as a field equipment rinsate sample. A low level hit of endosulfan sulfate was detected on the primary column for Sample 3ER-42. This compound was not confirmed, and was not detected in any sample. No action was taken. Samples WW-1 and WW-1(D) were listed on the field chain-of-custody form as field duplicate samples. Pesticide compounds were not detected in the field QC samples. No other field QC samples were identified.

#### IV. TECHNICAL ASSESSMENT

## **1.0** Holding Times: ACCEPTABLE/All criteria met.

All soil samples were extracted within 7 days of collection and were analyzed within 10 days of extraction. The USATHAMA PAM 11-41-required extraction holding time limit of 7 days and analysis holding time of 40 days were met.

# 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

The appropriate number of calibration standards were used to generate a zero-intercept model standard curve for pesticide compounds. Linearity was acceptable for the standard curves. Recalculation results of the regression statistics for the curves agreed with the laboratory values.

## 3.0 Daily Calibration: ACCEPTABLE/All criteria met.

The results of the daily calibration standard agreed with the initial calibration standard within 25%. Percent difference (%D) values for pesticide compounds were reported by the laboratory. All %D values were within control limits.

## **4.0** Blank Analysis: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

One method blank was associated with the samples in this lot. One non-target compound (endosulfan sulfate) was detected in the method blank at a low level. This compound was not confirmed on the secondary column, and was not detected in any field sample. No action was taken. Target pesticide compounds were not detected in the method blank at or above the certified reporting limit (CRL).

# 5.0 Matrix Spike / Matrix Spike Duplicate Analyses: ACCEPTABLE/All criteria met.

The laboratory performed MS/MSD analyses at a frequency of one pair per 20 samples. MS/MSD analysis was performed on Sample WW-1. Percent difference (%D) values and relative percent difference (RPD) for pesticide compounds were evaluated. All values were within USEPA control limits.

# 6.0 High Spike Analysis: ACCEPTABLE/With the following discussion.

Qualified Data: See Qualified Data Summary Table ANWT-1.

#### Discussion:

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One high concentration spike analysis was performed with this sample lot. The percent recovery values of the high spike analysis were within the control limits, with the exception of endo-

sulfan I. The recovery of endosulfan I was below the lower control limit. This compound was not detected in any field sample. The corresponding detection limits (CRL) were qualified as estimated (UJ).

# 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data for lot ANWT were reviewed for pesticide compounds; no false negatives or false positives were found. There were no discrepancies between the raw data and the transfer files.

# 8.0 Compound Quantitation and Certified Reporting Limit (CRL):

ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Target pesticide compounds were detected above the CRL in matrix spiked samples. Compound quantitation was verified by recalculation; no problems were found. The CRL on the transfer file met those listed in the method. No transcription errors were noted.

Several compounds not included in the Method UH20 target compound list were reported on the transfer files. These compounds were correctly flagged "T" (or "Z" for detections) by the laboratory. No action required.

# 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

# V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. Accuracy was acceptable, as demonstrated by the percent recovery values of spiked compounds. Precision was acceptable, as demonstrated by the low RPD values of the MS/MSD set.

The DataChem QA Status Report notes a low percent recovery for endosulfan I. This compound was not detected in any field sample. The associated detection limits (CRL) are estimated (UJ), due to the possible low bias.

The data, as qualified, are acceptable for use.

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
Endosulfan 1	AENSLF	UJ	WW-1		spike out low	
Endosulfan 1	AENSLF	nn nn	WW-1(DU	2.50E-03	spike out low	6
Endosulfan 1		INT INT	05D 40	2.50E-03	spike out low	
endosultan i	AENSLF	UJ	3ER-42	2.50E-03	spike out low	6
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**Environmental Science and Chemis** 

# **DATA QUALITY ASSESSMENT**

# TOOELE ARMY DEPOT—NORTH AREA DAAA15-90-D-0007, Task 0003

# SWMU 36 OLD BURN STAGING AREA

#### Prepared for:

RUST Environment and Infrastructure 743 Horizon Court, Suite 240 Grand Junction, Colorado 81506

# Prepared by:

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EcoChem Project Number: 8901-30

December 20, 1994

Approved for Release:

Mark T. Brindle Project Manager

EcoChem, Inc.

### DATA QUALITY ASSESSMENT SUMMARY

#### Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on soil samples and associated laboratory quality control samples. Refer to the Sample Index for sample identifications.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Primary	Secondary
SWMU 36	Arsenic	ANWH	B9 (SOIL)	Jason Ai	W. Jaime Bruton
	ICP Metals	ANWJ	JS12 (SOIL)	Jason Ai	W. Jaime Bruton

Data assessment was based on the QC criteria recommended in the above listed method; the Tooele Army Depot—North Area QC Plan; USEPA Functional Guidelines for Organic and Inorganic Data Review; and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

Copies of the qualified transfer files are included as APPENDIX A. Each lot report also contains a summary table of qualified results. Data Quality Assessment Worksheets, Communication, and Corrective Action Records have been placed in labeled envelopes with the original data packages.

#### **DATA VALIDATION QUALIFIER CODES**

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.
R	Unreliable result. Data should not be used. Analyte may or may not be present in the sample.

J Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality Assessment Report should be consulted for reason.

UJ Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report

should be consulted for reason.

# SITE DATA QUALITY SUMMARY: SWMU 36—OLD BURN STAGING AREA

#### Arsenic

One lot of arsenic analyses of soil samples using Method B9 was reviewed. All results are acceptable for use without qualification.

#### ICP-Metals

One lot of ICP-metal analyses of soil samples using Method JS12 was reviewed. All vanadium results less than the high spike concentration were qualified as estimated. These results are considered biased low by approximately 40% and the qualified results are slightly less precise than unqualified data. Qualification was recommended by both USAEC and EcoChem.

All antimony detection limits were rejected because of zero antimony recovery in the natural (matrix) spikes. this indicates the possibility of false negatives. The USAEC did not flag this problem because natural spikes are not part of the USAEC QA program; however, they recommend against using Method JS12 for antimony in soil samples because of known poor recovery problems.

Zinc data were qualified as estimated by the USAEC due to low spike recovery. Since the spike recovery was acceptable under Functional Guidelines, we recommend accepting the data without qualification. The results should be considered acceptable for all uses with the understanding that the results are potentially biased low by approximately 25%.

# DATA QUALITY ASSESSMENT ARSENIC—GFAA ANALYSES: SOIL METHOD: B9

Lot No.: ANWH

## I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANWH were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody (COC) forms for Lot ANWH were completed properly, and all samples listed in the COC forms were analyzed. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for Lot ANWH samples. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. A minimum of 10% of the field ID and laboratory ID were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QC SUMMARY

Two sets of field duplicate samples (BRP-94-09C/BRP-94-18C and OSP-94-04C/OSP-94-07A) were analyzed and reviewed. The relative percent difference (RPD) values for these two sets of field duplicate samples were 4.9% and 6.9%, respectively.

No field blanks were submitted with Lot ANWH samples.

#### IV. TECHNICAL ASSESSMENT

# 1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 180 days from date of collection to analysis.

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#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

For the initial calibration, the minimum number of standards were used, which met the method criterion. The linearity requirement of  $r \ge to 0.995$  was met. The laboratory analyzed a continuing calibration standard every ten samples as required. All percent recovery (%R) values of initial and continuing calibration verifications were within the control limits of 90% to 110%.

## 3.0 Blank Analyses: ACCEPTABLE/All criteria met.

Calibration blanks (ICB and CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated sample results. Continuing calibration blanks were analyzed after each continuing calibration as required. Preparation blanks were prepared with each digestion batch as required. No target analytes were detected in the blanks at or above the reporting limits.

# 4.0 Matrix Spike/Matrix Spike Duplicate Sample Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Two sets of MS/MSD analyses were performed on Samples OSP-94-01A and BRB-94-16A. The %R values for the first set of MS/MSD analyses were 196.0% and 55.0%, which were both outside the Functional Guidelines (2/94) control limit of 75% to 125%. The RPD value for the first set of MS/MSD analyses was 112.4%, which was greater than the control limit of 35%. The %R values for the second MS/MSD set were 80.7% (within control limits), and 69.7%, (less than the control limit). The RPD value for the second set of MS/MSD analyses was 14.6%, which was within the control limit of 35%.

Since MS/MSD analyses were not required in the USATHAMA program and high and low spike recovery values were within the control limits, arsenic results were not qualified due to low or high percent recovery values. However, arsenic results should be considered as estimated.

# 5.0 High Spike and Low Spike Analyses: ACCEPTABLE/All criteria met.

Two high spike and one low spike analyses were performed with each sample lot. The percent recovery values of both high spike analyses were 95.7% and 94.3%, which were within the control chart limits of 86.9% to 109.5%. The percent recovery value of the low spike analysis was 103.9%, which was within the control chart limit of 92.0% to 104.2%.

# 6.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limits for arsenic were reviewed. All reporting limits match the certified reporting limit listed in the laboratory SOP.

## 7.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

# V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAEC Chemistry Branch Response indicates that Lot ANWH is acceptable. The laboratory noted high spike recovery values moving in an upward direction, and low spike recovery values trending above the mean. No qualification is recommended based on these observations.

The data, as reported, are acceptable for use.

# DATA QUALITY ASSESSMENT METALS-ICP ANALYSES: SOIL

METHOD: JS12 LOT NO.: ANWJ

## I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANWJ were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final samples results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

## II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field chain-of-custody forms were present and complete for Lot ANWJ. All Lot ANWJ samples listed on the chain-of-custody were analyzed. Transcription errors were found in Samples BRB-94-12A, BRB-94-12B, and BRB-94-12C. These sample IDs were incorrectly reported as BRP-94-12A, BRP-94-12B, and BRP-94-12C. in the laboratory chain-of-custody, transfer file printout, and raw data. The laboratory was contacted and corrected forms have not yet been received from the laboratory. All other sample IDs were tracked from the field chain-of-custody to the transfer file printout and no errors were noted. Internal chain-of-custody forms clearly indicated the laboratory numbers and field sample IDs for each sample.

#### III. FIELD QUALITY CONTROL

No field blanks or field duplicate samples were submitted with Lot ANWJ samples.

#### IV. TECHNICAL ASSESSMENT

1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 180 days from date of collection to analysis.

2.0 Instrument Calibration: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Instrument calibration consisted of one blank and one standard. Instrument sensitivity could not be evaluated with the documentation provided. All calibration check standards were within ±10% of the true value with the exception of a percent recovery (%R) for thallium at 127.2%. Since the %R value was greater than the upper control limit of 110% and thallium was not detected in any of the samples, no action was recommended. Plus or minus two times the standard deviation control limits were not utilized because historic calibration check results were not provided.

The laboratory analyzed a continuing calibration verification (CCV) standard every ten samples as required. The %R of the CCV were within  $\pm 10%$  of the true value. Plus or minus two times the standard deviation control limits were not utilized because historic calibration verification results were not provided.

**4.0** Blank Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Calibration blanks (CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated samples. Continuing calibration blanks were analyzed after each continuing calibration as required. A preparation blank was prepared with each digestion batch as required. No CCB result was greater than the reporting limit or less than the negative reporting limit, and no PB result was greater than the reporting limit. Aluminum, barium, calcium, chromium, iron, potassium, magnesium, manganese, vanadium, and zinc were detected in one QC blank (BL-39714-1). Since this soil blank sample (from RMA soil, R3D-381) was unwashed soil, no qualifications were recommended.

5.0 Matrix Spike Sample Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table ANWJ-1.

#### Discussion:

MS/MSD analyses were performed on Samples OSP-94-05A and BRB-94-12A. The MS %R value for chromium in the first set of MS/MSD analyses was 74%, which was slightly less than the lower control limit of 75%. Since the MSD %R value and relative percent difference (RPD) values were within the control limits, no action was recommended. The antimony %R values in both MS/MSD analyses were 0%, which indicates antimony analyses by ICP method were questionable. Antimony was not detected in any of the samples leading to a possibility of false non-detects. The quantitation limits for antimony were rejected and not usable for any purposes. All other %R values and RPD values were within the control limits.

# 6.0 High Spike and Low Spike Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: See Qualified Data Summary Table ANWJ-1.

#### Discussion:

One low spike and two high spike analyses were performed with this sample lot. Recovery values were evaluated based on the control chart upper and lower limits. The %R of low spike and high spike analyses were within the control limits, with the exception of those listed in the table below.

Analyte	Low Spike	Control Limit	1st High Spike	2nd High Spike	Control Limits
Beryllium	Acceptable	92.5% to 105.1%	99%	100%	94.2% to 98.8%
Cadmium	Acceptable	86.6% to 107.8%	98%	100%	92.4% to 97.2%
Cobalt	Acceptable	94.8% to 124.2%	Acceptable	103%	95.0% to 102.2%
Chromium	Acceptable	90.3% to 111.5%	101%	102%	96.6% to 100.4%
Copper	Acceptable	104.8% to 121.8%	Acceptable	101%	95.2% to 100.4%
Nickel	Acceptable	88.8% to 126.2%	Acceptable	101%	94.0% to 100.8%
Lead	Acceptable	88.9% to 116.9%	102%	104%	95.1% to 100.3%
Antimony	Acceptable	45.1% to 75.9%	Acceptable	87.8%	79.1% to 87.7%
Vanadium	42.0%	69.2% to 127.8%	Acceptable	Acceptable	92.8% to 101.4%
Zinc	76.7%	88.5% to 104.7%	Acceptable	Acceptable	93.7% to 100.3%

The vanadium low spike %R value was less than both the USAEC control limit and the control limit specified in Functional Guidelines (2/94). Vanadium results in field samples that were less than the high spike concentration (30  $\mu$ g/g) were considered biased low and were qualified as estimated. Since both vanadium high spike %R values were within the control limits, vanadium results greater than the high spike concentration were acceptable and no other qualifications are recommended.

All other spike recovery values were close to the USAEC control limits and still within the control limit specified in Functional Guidelines (2/94), no other qualifications are recommended.

# 7.0 Duplicate Sample Analyses: NOT APPLICABLE

Laboratory duplicate analyses were not performed with this sample lot.

# 8.0 ICP Interference Check Sample (ICS) Analyses: NOT PERFORMED

ICP interference check sample analyses were not performed with this sample lot.

# 9.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits matched the certified reporting limit listed in the laboratory SOP.

#### 10.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

#### V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAEC Chemistry Branch Response indicates that Lot ANWJ is partially acceptable. The laboratory noted high spike recovery values trending above the central line for cadmium and lead; high spike recovery values moving in a downward direction for chromium; low spike range trending above the central line for boron, beryllium, and lead; low spike recovery values trending below the central line for copper and molybdenum; low spike recovery values moving in an upward direction for cobalt, tin, tellurium and thallium; low spike recovery values moving in a downward direction for molybdenum, nickel, lead, vanadium and zinc; and low spike recovery values less than the control chart lower limits for vanadium and zinc.

Vanadium was flagged with a "7" by the laboratory indicating low spike recovery. All vanadium results that were less than the high spike concentration (30  $\mu$ g/g) should be considered biased low and qualified. The zinc low spike %R value was 76.7%, which was less than the control chart lower limit of 88.5%, but within the Functional Guidelines (2/94) control limits of 75% to 125%. No qualification was recommended. No other qualifications are recommended on these observations.

The data, as qualified, are acceptable for use.

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
Antimony	SB	R	OSP-94-05A	LT 19.6 ug/g	MS/MSD %R = 0%	5 Section
Antimony	SB	R	OSP-94-05B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OSP-94-05C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OSP-94-06A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OSP-94-06B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	OSP-94-06C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-01A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-01B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-01C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-02A	LT 19.6 ug/g	MS/MSD %R = 0%	
Antimony	SB	R	BWB-94-02B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-02C	LT 19.6 ug/g	MS/MSD %R = 0%	
Antimony	SB	R	BWB-94-03A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-03B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BWB-94-03C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRB-94-12A	LT 19.6 ug/g	MS/MSD %R = 0%	
Antimony	SB	R	BRB-94-12B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRB-94-12C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-03A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-03B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-03C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-09A		MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-09B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-07A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-07B	1	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-07C	1. =	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-01A	1	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-01B	1	MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-01C		MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-13A		MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-13B		MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-13C		MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-02A		MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-02B		MS/MSD %R = 0%	5
Antimony	SB	R	BRP-94-02C		MS/MSD %R = 0%	5
/anadium	V	J	OSP-94-05A		LS %R = 42.2%	6
/anadium	V	J	OSP-94-05B	+	LS %R = 42.2%	6
/anadium	V		OSP-94-05C		LS %R = 42.2%	6
/anadium	V		OSP-94-06A		LS %R = 42.2%	6
/anadium	V	J	OSP-94-06B		LS %R = 42.2%	6
/anadium	V		OSP-94-06C		LS %R = 42.2%	6
/anadium	V		BWB-94-01A		LS %R = 42.2%	6
/anadium	V		BWB-94-01B		S %R = 42.2%	6
/anadium	V		BWB-94-02A		S %R = 42.2%	6
/anadium	V		BWB-94-02B		S %R = 42.2%	6
/anadium	V		BWB-94-03A		S %R = 42.2%	6
/anadium	V		BWB-94-03B		S %R = 42.2%	6

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
Vanadium	V	J	BWB-94-03C	7.85 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRB-94-12A	15.1 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRB-94-12B	22.0 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRB-94-12C	14.1 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-03A	21.2 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-03B	15.1 ug/g	LS %R = 42.2%	6
Vanadium	- V	J	BRP-94-03C	11.4 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-09A	12.2 ug/g	LS %R = 42.2%	6
Vanadium	<del>                                     </del>	J	BRP-94-09B	10.3 ug/g	LS %R = 42.2%	6
Vanadium	+ v	J	BRP-94-07A	21.9 ug/g	LS %R = 42.2%	6
Vanadium	+ ·	<del>  j</del>	BRP-94-07B	10.4 ug/g	LS %R = 42.2%	6
Vanadium	<del>  `</del>	J	BRP-94-07C	6.88 ug/g	LS %R = 42.2%	6
Vanadium	l v	j	BRP-94-01A	20.0 ug/g	LS %R = 42.2%	6
Vanadium	<del>                                     </del>	J	BRP-94-01B	14.7 ug/g	LS %R = 42.2%	6
Vanadium	V	J	BRP-94-01C	18.3 ug/g	LS %R = 42.2%	6
Vanadium	<del>  v</del>	<del>-</del>	BRP-94-13A	12.0 ug/g	LS %R = 42.2%	6
Vanadium	$+\frac{v}{v}$	J	BRP-94-13B	6.10 ug/g	LS %R = 42.2%	6
Vanadium	<del>  v</del>	J	BRP-94-13C	4.34 ug/g	LS %R = 42.2%	6
Vanadium	<del>  v</del>	<del>                                     </del>	BRP-94-02A	12.8 ug/g	LS %R = 42.2%	6
Vanadium Vanadium	+ v	J -	BRP-94-02B	21.8 ug/g	LS %R = 42.2%	6
Vanadium	<del>                                     </del>	1	BRP-94-02C	8.52 ug/g	LS %R = 42.2%	. 6

**Environmental Science and Chemis** 

# **DATA QUALITY ASSESSMENT**

# TOOELE ARMY DEPOT—NORTH AREA DAAA15-90-D-0007, TASK 0003

# SWMU 40 AED TEST RANGE

### Prepared for:

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## Prepared by:

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December 20, 1994

Approved for Release:

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EcoChem, Inc.

## DATA QUALITY ASSESSMENT SUMMARY

### Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on soil samples and associated laboratory quality control samples. Refer to the Sample Index for sample identifications.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	<u>Primary</u>	Secondary
SWMU 40	Explosives	AMGX	LW23 (SOIL)	Mark T. Brindle	Eric Strout
	Explosives	AMIE	LW23 (SOIL)	Mark T. Brindle	Eric Strout
	<b>Explosives</b>	AMVC	LW23 (SOIL)	Mark T. Brindle	Eric Strout
	ICP Metals	ANCV	JS12 (SOIL)	Jason Ai	W. Jaime Bruton

Data assessment was based on the QC criteria recommended in the above listed method; the Tooele Army Depot—North Area QC Plan; USEPA Functional Guidelines for Organic and Inorganic Data Review; and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

Copies of the qualified transfer files are included as APPENDIX A. Each lot report also contains a summary table of qualified results. Data Quality Assessment Worksheets, Communication, and Corrective Action Records have been placed in labeled envelopes with the original data packages.

# **DATA VALIDATION QUALIFIER CODES**

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.
R	Unreliable result. Data should not be used. Analyte may or may not be present in the sample.

J Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality Assessment Report should be consulted for reason.

UJ Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report should be consulted for reason.

#### SITE DATA QUALITY SUMMARY: SWMU 40—AED TEST RANGE

#### **Explosives**

Three lots of explosives analyses of soil samples using Method LW23 were reviewed. Data for Lot AMGX are acceptable for use without qualification. Data for Lot AMIE are acceptable for use without qualification, with the exception of all CRL for 1,3,5-trinitrobenzene. All 1,3,5-trinitrobenzene detection limits were qualified as estimated due to low concentration spike accuracy deficiencies. All 1,3,5-trinitrobenzene data in Lot AMVC were rejected, (R), based on accuracy and precision deficiencies. The data for 1,3,5-trinitrobenzene are considered biased low by approximately 50%, and are unusable for any purpose. All other data in Lot AMVC are acceptable.

#### ICP-Metals

One lot of ICP-metal analyses of soil samples using Method JS12 were reviewed. All antimony detection limits were rejected because of zero antimony recovery in the natural (matrix) spikes. This indicates the possibility of false negatives. The USAEC did not flag this problem because natural spikes are not part of the USAEC QA program; however, they recommend against using Method JS12 for antimony in soil samples because of known poor recovery problems.

# DATA QUALITY ASSESSMENT

EXPLOSIVES ANALYSES: SOIL METHOD: LW23
LOT: AMGX

### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot AMGX were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed. DataChem QA Status Reports and USAEC Control Chart Response were submitted. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: Changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in Lot AMGX. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for each sample in Lot AMGX. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field IDs and laboratory IDs for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QUALITY CONTROL

Three field duplicate samples were identified in Lot AMGX as follows: three duplicate samples (ARP-94-61A, ARP-94-61B, and ARP-94-61C) which are pairs of Samples ARP-94-09A, ARP-94-09B, and ARP-94-09C, respectively. Positive results were not reported for any of the field QC samples in Lot AMGX. No evaluation of field duplicate precision (RPD) was possible.

#### IV. TECHNICAL ASSESSMENT

## 1.0 Holding Times: ACCEPTABLE/All criteria met.

All soil samples in Lot AMGX were extracted within four days of collection and were analyzed within 12 days of extraction. The seven-day extraction holding time and 40-day analysis holding time limits were met.

#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

The appropriate number of calibration standards were used to generate a zero-intercept model standard curve for explosives compounds. Linearity was acceptable for the standard curves. Recalculation results of the regression statistics for the curves agreed with the laboratory values.

### 3.0 Daily Calibration: ACCEPTABLE/All criteria met.

The results of the daily calibration standard agreed with the initial calibration standard within 25%.

## 4.0 Blank Analysis: ACCEPTABLE/All criteria met.

One soil method blank was associated with the samples in Lot AMGX. Target explosives compounds were not detected in the method blank at or above the certified reporting limit (CRL).

## 5.0 Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/All criteria met.

The laboratory used Sample ARP-94-07A for MS/MSD analyses with the samples from Lot AMGX. All percent recovery values were within control limits of 70% to 130%. All relative percent difference values were less than the maximum allowable value of 20%.

# **6.0 High Spike and Low Spike Recovery:** ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

The DataChem QA Status Report noted that the recovery values for the following compounds were less than the lower control limit in the low concentration spike analyses: 1,3,5-trinitrobenzene, 2,4-dinitrotoluene, and RDX. The QA Status Report and the USAEC Control Chart Response letter recommend that the data for Lot AMGX be accepted. The low concentration spike analysis recovery values were slightly less than the lower control limits, the data are not significantly affected, and no qualifiers were assigned.

## 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data for Lot AMGX were reviewed for explosives compounds; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

# 8.0 Compound Quantitation and Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

An evaluation of compound quantitation was performed by recalculating the sample results from the raw data. Discrepancies were not found. The CRL on the transfer file met those listed in the method. No transcription errors were noted.

# 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

## V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method.

An examination of the DataChem QA Status Report that includes Lot AMGX revealed the following items: 1,3,5-trinitrobenzene, 2,4-dinitrotoluene, and RDX results in the low spike were below the lower control limit. Precision and accuracy, as demonstrated by the recovery of matrix spiking compounds, was acceptable. Field duplicate RPD values were not calculable since no target compounds were detected in the duplicate pairs. Since the outliers for this lot were only slightly outside of the lower control limits in each case, the data are not significantly affected, and no qualifiers were assigned.

All data, as reported, are acceptable for use.

# DATA QUALITY ASSESSMENT EXPLOSIVES ANALYSES: SOIL

METHOD: LW23 LOT: AMIE

## I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot AMIE were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed. DataChem QA Status Reports and USAEC Control Chart Response were submitted. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: Changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in Lot AMIE. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for each sample in Lot AMIE. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field IDs and laboratory IDs for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QUALITY CONTROL

No samples from Lot AMIE were identified as field quality control samples on the chain-of-custody forms.

#### IV. TECHNICAL ASSESSMENT

## 1.0 Holding Times: ACCEPTABLE/All criteria met.

All soil samples in Lot AMIE were extracted within three days of collection and were analyzed within 16 days of extraction. The 7-day extraction holding time and 40-day analysis holding time limits were met.

#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

The appropriate number of calibration standards were used to generate a zero-intercept model standard curve for explosives compounds. Linearity was acceptable for the standard curves. Recalculation results of the regression statistics for the curves agreed with the laboratory values.

**3.0 Daily Calibration:** ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

The results of the daily calibration standard agreed with the initial calibration standard within 25%, with the exceptions in the table below. From the AMIE daily calibration results, the area counts for HMX were greater than the upper acceptance limit; however, the exceedance was so slight that the data was not qualified. The area counts for nitrobenzene were less than the lower area acceptance limit, but no positive identifications of the two compounds were reported. The detection limits (CRL) were not qualified.

Analyte	Sample Number	Calibration Date and Time	Daily Calibration Area Count	Area Count Acceptance Limits	
Nitrobenzene	All Samples in Lot AMIE	7/1/94 00:47	667.4	682.3 - 797.9	
		7/1/94 05:26	640.4		
НМХ		7/1/94 00:47	367.7	308.8 - 366.0	

## **4.0** Blank Analysis: ACCEPTABLE/All criteria met.

One soil method blank was associated with the samples in Lot AMIE. Target explosives compounds were not detected in the method blank at or above the certified reporting limit (CRL).

#### 5.0 Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/All criteria met.

The laboratory used Sample ARP-94-16A for MS/MSD analyses with the samples from Lot AMIE. All percent recovery values were within control limits of 70% to 130%. All relative percent difference values were less than the maximum allowable value of 20%.

# **6.0 High Spike and Low Spike Recovery:** ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table AMIE-1.

#### Discussion:

The percent recovery value for 1,3,5-trinitrobenzene in the low spike was 57.6%, below the 78% lower control limit. The USAEC Chemistry Branch made the recommendation that all 1,3,5-trinitrobenzene results in Lot AMIE be estimated due to the low spike recovery values. The reviewer concurs with the recommendations.

# 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data for Lot AMIE were reviewed for explosives compounds; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

# 8.0 Compound Quantitation and Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

An evaluation of compound quantitation was performed by recalculating the sample results from the raw data. Discrepancies were not found. The CRL on the transfer file met those listed in the method. No transcription errors were noted.

# 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

## V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method.

An examination of the DataChem QA Status Report that includes Lot AMIE revealed the following item: 1,3,5-trinitrobenzene results in the low spike were below the lower control limit.

All 1,3,5-trinitrobenzene detection limits (CRL) were qualified as estimated (UJ) due to low spike accuracy deficiencies.

All data, as qualified, are acceptable for use.

			1			Report
Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Section
1,3,5-trinitrobenzene	135TNB	υJ	ARP-94-16A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	ARP-94-16B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	ARP-94-16C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	ΠΊ	ARP-94-17A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	ARP-94-17B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	ARP-94-17C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	ARP-94-18A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	ARP-94-18B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	บ่า	ARP-94-18C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	ARP-94-19A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	บป	ARP-94-19B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	ARP-94-19C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	ΠΊ	ARP-94-20A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	ΩJ	ARP-94-20B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	ΠΊ	ARP-94-20C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	ΠΊ	ARP-94-21A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	ΠΊ	ARP-94-21B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	UJ	ARP-94-21C	LT 9.22E-1	LS %R < LCL	6.0

# DATA QUALITY ASSESSMENT EXPLOSIVES ANALYSES: SOIL

METHOD: LW23 LOT: AMVC

#### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot AMVC were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed. DataChem QA Status Reports and USAEC Control Chart Response were submitted. Final sample results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: Changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

Field chain-of-custody forms were present and complete for each sample in Lot AMVC. All forms were signed and dated. The field chain-of-custody forms indicated no problems with sample receipt conditions.

Laboratory chain-of-custody forms were present and complete for each sample in Lot AMVC. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory chain-of-custody forms. The field IDs and laboratory IDs for all samples were tracked from the chain-of-custody forms, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QUALITY CONTROL

No samples from Lot AMVC were identified as field quality control samples on the chain-of-custody forms.

#### IV. TECHNICAL ASSESSMENT

## 1.0 Holding Times: ACCEPTABLE/All criteria met.

All soil samples in Lot AMVC were extracted within five days of collection and were analyzed within 23 days of extraction. The seven-day extraction holding time and 40-day analysis holding time limits were met.

#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

The appropriate number of calibration standards were used to generate a zero-intercept model standard curve for explosives compounds. Linearity was acceptable for the standard curves. Recalculation results of the regression statistics for the curves agreed with the laboratory values.

### 3.0 Daily Calibration: ACCEPTABLE/All criteria met.

The results of the daily calibration standard agreed with the initial calibration standard within 25%.

### 4.0 Blank Analysis: ACCEPTABLE/All criteria met.

One soil method blank was associated with the samples in Lot AMVC. Target explosives compounds were not detected in the method blank at or above the certified reporting limit (CRL).

## 5.0 Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/All criteria met.

The laboratory used Sample ARP-94-57A for MS/MSD analyses with the samples from Lot AMVC. All percent recovery values were within control limits of 70% to 130%. All relative percent difference values were less than the maximum allowable value of 20%.

# 6.0 High Spike and Low Spike Recovery: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table AMVC-1.

#### Discussion:

In Lot AMVC the low concentration standard spike recovery values for 1,3,5-trinitrobenzene were significantly less than the lower control limit. The USAEC Chemistry Branch made the recommendation that all 1,3,5-trinitrobenzene results in Lot AMVC be rejected. All 1,3,5-trinitrobenzene detection limits for Lot AMVC were rejected (R).

# 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data for Lot AMVC were reviewed for explosives compounds; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

# 8.0 Compound Quantitation and Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

An evaluation of compound quantitation was performed by recalculating the sample results from the raw data. Discrepancies were not found. The CRL on the transfer file met those listed in the method. No transcription errors were noted.

### 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

#### V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method.

An examination of the DataChem QA Status Report that includes Lot AMVC revealed the following item: 1,3,5-trinitrobenzene results in the low spike were below the lower control limit.

All 1,3,5-trinitrobenzene results were rejected (R) due to low spike precision and accuracy deficiencies.

The data that are rejected (R) are unusable for any purpose. Other data, as reported, are acceptable for use.

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
1,3,5-trinitrobenzene	135TNB	R	ARP-94-57A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-57B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-57C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-58A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-58B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-58C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-59A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-59B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-59C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-60A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-60B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	ARP-94-60C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	OBP-94-01A	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	OBP-94-01B	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	OBP-94-01C	LT 9.22E-1	LS %R < LCL	6.0
1,3,5-trinitrobenzene	135TNB	R	OBP-94-01D	LT 9.22E-1	LS %R < LCL	6.0

# DATA QUALITY ASSESSMENT METALS-ICP ANALYSES: SOIL

METHOD: JS12 LOT No.: ANCV

### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for Lot ANCV were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package. Control charts, DataChem QA status report and USAEC control chart response were provided in this data package. Final samples results were not available at this time.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

## II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field chain-of-custody forms were present and complete for Lot ANCV. All Lot ANCV samples listed on the chain-of-custody were analyzed. Sample IDs were tracked from the field chain-of-custody to the transfer file printout and no errors were noted. Internal chain-of-custody forms clearly indicated the laboratory numbers and field sample IDs for each sample. No errors in field IDs were noted.

#### III. FIELD QUALITY CONTROL

No field blanks or field duplicate samples were submitted with Lot ANCV samples.

#### IV. TECHNICAL ASSESSMENT

1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples were analyzed within the method specified holding time of 180 days from date of collection to analysis.

2.0 Instrument Calibration: ACCEPTABLE/With the following discussion.

Qualified Data: None.

12/20/94 6:24 PM

#### Discussion:

Instrument calibration consisted of one blank and one standard. Instrument sensitivity could not be evaluated with the documentation provided. All calibration check standards were within ±10% of the true value with the exception of thallium with a percent recovery (%R) value of 121.6%. Since the %R value was greater than the upper control limit of 110% and thallium was not detected in any of the samples, no action was recommended. Plus or minus two times the standard deviation control limits were not utilized because historic calibration check results were not provided.

The laboratory analyzed a continuing calibration verification (CCV) standard every ten samples as required. The percent recovery values of the CCVs were within  $\pm 10\%$  of the true value. Plus or minus two times the standard deviation control limits were not utilized because historic calibration verification results were not provided.

**4.0** Blank Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

Calibration blanks (CCB) and preparation blanks (PB) were evaluated for possible contamination effects. Calibration blanks were also evaluated for causing possible low bias in associated sample results. Continuing calibration blanks were analyzed after each continuing calibration as required. A preparation blank was prepared with each digestion batch as required. No CCB result was greater than the reporting limit or less than the negative reporting limit and no PB result was greater than the reporting limit. Aluminum, barium, calcium, iron, potassium, magnesium, manganese, vanadium, and zinc were detected in one QC blank (BL-36643-1). Since this soil blank sample (from RMA soil, R3D-385) was unwashed soil, no qualifications were recommended.

5.0 Matrix Spike Sample Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See Qualified Data Summary Table ANCV-1.

#### Discussion:

Two sets of MS/MSD analyses were performed on Samples ARP-94-11A and ARP-94-16A. The antimony %R values in both MS/MSD analyses were 0% which indicates antimony analyses by ICP method were questionable. As antimony was not detected in any of the samples a possibility of false non-detects exists. The quantitation limits for antimony were rejected and not usable for any purposes. All other %R and RPD values were within the control limits.

# 6.0 High Spike and Low Spike Analyses: ACCEPTABLE/With the following discussion.

Qualified Data: None.

#### Discussion:

One low spike and two high spike analyses were performed with this sample lot. Analyte recovery values were evaluated based on the control chart upper and lower limits. The %R values of low spike and high spike analyses were within the control limits, with the exception of those listed in the table below.

Analyte	Low Spike	Control Limit	1st High Spike	2nd High Spike	Control Limits
Cadmium	101.6%	91.1% to 100.3%	Acceptable	Acceptable	87.3% to 122.4%
Chromium	112.0%	94.1% to 103.5%	Acceptable	Acceptable	90.6% to 107.8%
Copper	115.2%	100.6% to 111.4%	Acceptable	Acceptable	98.4% to 112.1%
Antimony	51.4%	59.0% to 85.2%	Acceptable	53.0%	55.0% to 84.0%

As these spike recovery values were close to the USAEC control limits and still within the control limits specified in Functional Guidelines (2/94), no qualifications are recommended.

## 7.0 Duplicate Sample Analyses: NOT APPLICABLE

Laboratory duplicate analyses were not performed with this sample lot.

# 8.0 ICP Interference Check Sample (ICS) Analyses: NOT PERFORMED

ICP interference check sample analyses were not performed with this sample lot.

# 9.0 Certified Reporting Limits (CRL): ACCEPTABLE/All criteria met.

The reporting limit for each analyte was reviewed. All reporting limits match the certified reporting limit listed in the laboratory SOP.

#### 10.0 Calculations: ACCEPTABLE/All criteria met.

No transcription errors or calculation errors were noted in the sample result data.

#### V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified method. No technical deficiencies were found.

The USAEC Chemistry Branch Response indicates that Lot ANCV is partially acceptable. The positive antimony results should be qualified as estimated and the quantitation limits should be

rejected. The laboratory noted high spike recovery values trending above the mean for tin; high spike recovery values trending below the mean for boron, cobalt, copper, and nickel; high spike recovery values moving in an upward direction for beryllium; low spike recovery values trending above the mean for chromium; low spike range trending above the mean for chromium, nickel, antimony, and thallium; low spike recovery values moving in a downward direction for antimony; and low spike recovery values moving in an upward direction for cadmium, tin, and tellurium. No other qualification is recommended based on these observations.

The data, as qualified, are acceptable for use.

# Qualified Data Summary Table Lot No: ANCV

Analyte	Code	Qualifier	Sample ID	Concentration	Reason	Report Section
Antimony	SB	R	ARP-94-11A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-11B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-11C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-12A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-12B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-12C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-13A	ARP-94-13A LT 19.6 ug/g MS/MSD %R = (		5
Antimony	SB	R	ARP-94-13B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-13C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-14A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-14B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-14C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-15A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-15B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-15C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-16A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-16B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-16C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-17A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-17B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-17C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-18A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-18B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-18C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-19A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-19B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-19C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-20A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-20B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-20C	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-21A	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	R	ARP-94-21B	LT 19.6 ug/g	MS/MSD %R = 0%	5
Antimony	SB	Ŕ	ARP-94-21C	LT 19.6 ug/g	MS/MSD %R = 0%	5

**Environmental Science and Chemist** 

CHAINAL

# DATA QUALITY ASSESSMENT

# TEAD-N Remedial Investigation Phase II DAAA15-90-D-0007, Task Order 0003

SWMU 40 AED Test Range

Prepared for:

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### Prepared by:

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EcoChem Project Number: C8909-20

February 16, 1996

DRAFT

Approved for Release:

**Eric Strout** 

Sr. Project Chemist

EcoChem, Inc.

# DATA QUALITY ASSESSMENT SUMMARY

### Basis for Data Quality Assessment

This report summarizes the results of data quality assessment performed on the data for soil and water samples and associated laboratory quality control sample analyses.

Samples were analyzed for the following parameters and were reviewed by the chemists listed below:

SWMU	Test	Lot	Method (Matrix)	Validation Level	Primary	Secondary
SWMU 40	SVOC	AVSY	LM25 (SOIL)	Tier 2	Sherri Wunderlich	Eric Strout
	SVOC	AVSI	UM25 (WATER)	Tier 1	Sherri Wunderlich	Eric Strout
	Explosives	AVNC	LW23 (SOIL)	Tier 2	Jason Ai	Jaime Bruton
	Explosives	AVRO	LW23 (SOIL)	Tier 1	Jason Ai	Jaime Bruton
	Explosives	AVNE	UW25 (WATER)	Tier 1	Jason Ai	Jaime Bruton
	Explosives	AVRB	UW25 (WATER)	Tier 1	Jason Ai	Jaime Bruton
	Nitrocellulose	AVVU	LF05 (SOIL)	Tier 2	Jaime Bruton	Jason Ai
	Nitrocellulose	AVWX	UF05 (WATER)	Tier 1	Jaime Bruton	Jason Ai
	Nitroguanidine	AVRR	LW30 (SOIL)	Tier 2	Jaime Bruton	Jason Ai
	Nitroguanidine	AVVS	UW29 (WATER)	Tier 1	Jaime Bruton	Jason Ai
i	PETN / NG	AVRQ	LW27 (SOIL)	Tier 2	Jaime Bruton	Jason Ai
	PETN / NG	AVRT	UW27 (WATER)	Tier 1	Jaime Bruton	Jason Ai
	Ethyl Centralite	AVRP	SOP # OL-DC-EC (SOIL)	Tier 2	Jaime Bruton	Jason Ai
	Ethyl Centralite	AVRS	SOP # OL-DC-EC (WATER)	Tier 1	Jaime Bruton	Jason Ai
	Perchlorate	AWBI	SOP # IC-DC-CIO4 (SOIL)	Tier 1	Jaime Bruton	Jason Ai
	Perchlorate	AWBH	SOP # IC-DC-CIO4 (WATER)	Tier 1	Jaime Bruton	Jason Ai
	Cyanide	AVTB	KY15 (SOIL)	Tier 1	Jason Ai	Jaime Bruton
	Cyanide	AVSJ	TY23 (WATER)	Tier 1	Jason Ai	Jaime Bruton
	Nitrates	AVVA	KF17 (SOIL)	Tier 1	Jason Ai	Bob Olsiewski
	Nitrates	AVSC	LL8 (WATER)	Tier 1	Jason Ai	Bob Olsiewski
	Sulfate	AWAX	KT07 (SOIL)	Tier 1	Jason Ai	Bob Olsiewski
	Sulfate	AWCR	TT09 (WATER)	Tier 1	Jason Ai	Bob Olsiewski

Data assessment was based on the QC criteria recommended in the above listed methods; the Tooele Army Depot—North Area QC Plan; USEPA National Functional Guidelines for Organic and Inorganic Data Review (2/94); and USATHAMA (USAEC) Quality Assurance Program (PAM 11-41).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are assigned a J or UJ, data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be

used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the above-referenced documents and method.

A summary table of all qualified data for SWMU-40 is included as APPENDIX A. Each lot report also contains a summary table of qualified results. Data qualifiers are defined below. A numerical code has been added to each data qualifier to indicate the reason for the qualifier. A list of all of the reason codes is included as APPENDIX B. Data Quality Assessment Worksheets, Communication, and Corrective Action Records (if any) have been placed in labeled envelopes with the original data packages.

#### **DATA VALIDATION QUALIFIER CODES**

U	The material was analyzed for, but was not detected. The associated numerical value is the certified reporting limit.
R	Unreliable result. Data should not be used. Analyte may or may not be present in the sample.
J	Analyte present. Reported value is an estimate that may not be accurate or precise. Data Quality Assessment Report should be consulted for reason.
UJ	Not detected. Detection limit may be inaccurate or imprecise and may not be equal to certified reporting limit. Data Quality Assessment Report

should be consulted for reason.

#### SITE DATA QUALITY SUMMARY

### Semivolatile Organics

One lot of data for the analysis of semivolatile organic compounds in soil samples using Method LM25, and one lot of water sample analyses using Method UM25 were reviewed. For the soil samples, the precision and accuracy were acceptable, based on the percent recovery values for surrogate and matrix spike analytes, and the relative percent difference values for the matrix spike/matrix spike duplicate (MS/MSD) analyses. The water sample was an equipment rinsate blank associated with the soil samples. No MS/MSD analysis was performed for the water sample, so an evaluation of precision was not possible. The accuracy was acceptable, based on the acceptable surrogate percent recovery values.

Three unknown (non-target) compounds were detected in the method blank associated with the soil samples. All results for these compounds in the associated samples were less than the action

levels (ten times the blank concentration), and were qualified as not usable (R). All remaining unknown compounds were qualified as estimated concentration with tentative identification (JN). The water matrix method blank, and the equipment rinsate blank did not contain any target or unknown compounds at concentrations equal to or greater than the certified reporting level (CRL).

For both lots of data, qualifiers were issued due to instrument sensitivity concerns noted in the initial calibration. Three compounds (pentachlorophenol, 2,4-dinitro-2-methylphenol, and kepone) had very poor response in the initial calibration standard at a concentration equivalent to the CRL for that compound. The responses were acceptable at higher concentrations. The CRL for these compounds were estimated (UJ) to reflect the possible low bias. One other compound (benzidine) had both an inadequate and erratic response. All CRL for this compound were rejected (R).

Aniline was not reported in any of the initial calibration summary pages or raw data, although a response was reported for the continuing calibrations. All CRL for aniline were rejected. All of the PCB compounds and toxaphene were not included in any of the calibration standards, and were not part of the list of compounds scanned for during sample analysis. All reported detection limits for these compounds were rejected. No other qualifiers were issued to any semivolatile analysis of soil or water samples.

### **Explosive Compounds**

Two lots of data for analyses of explosive compounds in soil samples using Method LW23 were reviewed. The accuracy was acceptable for these lots, based on the percent recovery values for the surrogate compounds and most spiked analytes (MS/MSD for lot AVRO, low and high spike analyses for both lots). The high spike for lot AVNC had recoveries for 1,3,5-trinitrobenzene and nitrobenzene that were slightly less than the lower control limit. As the compounds were not detected in the samples, and as the low spike values were acceptable, no action was taken. The precision was acceptable, based on the relative percent difference values for duplicate (MS/MSD for lot AVRO, and high spike duplicate analyses for both lots) analyses. No qualifiers were issued to any of the soil samples.

Two lots of data for analyses of explosive compounds in water samples using Method UW25 were reviewed. The samples in the water lots were field and equipment rinsate blanks. Explosives were not detected in the blanks. The accuracy was acceptable for these lots, based on the percent recovery values for the surrogate compounds and spiked analytes (low and high spike analyses for both lots). No MS/MSD analyses were submitted for either lot. Three compounds had recovery values slightly greater than the upper control limits in the low or high spike in each of the lots. As the compounds were not detected in the samples, no action was taken. The precision was acceptable, based on the relative percent difference values for duplicate analyses of the high spike for both lots. The CRL were slightly elevated for RDX in two samples (3ER-69 and 3FB-P) in lot AVRB due to interferences. No qualifiers were issued to any of the water samples.

#### **Nitrocellulose**

One lot of data for nitrocellulose analyses of soil samples using Method LF05 was reviewed. Nitrocellulose was reported in the method blank at a high level, nearly four times the CRL for nitrocellulose. Nitrocellulose was reported in all samples at a similar level, and was qualified as not detected (U) in all samples based upon the method blank contamination. The accuracy was not acceptable. The reported percent recovery values for the spiked analytes in the high and low spikes were acceptable, however, the reported values were blank corrected prior to the calculation of the percent recovery. If the percent recoveries are recalculated without blank correction, all standard spike recoveries are above the control limit. MS/MSD analyses were also performed. The percent recovery values in the MS/MSD analyses were less than 25%. All results were rejected.

One lot of data for nitrocellulose analyses of water samples using Method UF05 was reviewed. The lot consisted of a single equipment rinsate blank associated with the soil samples. Nitrocellulose was not detected in the blank. The accuracy was acceptable for this lot, based on the percent recovery values for spiked analytes. No MS/MSD analyses were performed. Precision was acceptable, based upon the relative percent difference values of the duplicate high spike analyses. No qualifiers were issued to the water sample.

### **Nitroguanidine**

One lot of data for nitroguanidine analyses in soil samples using Method LW30 was reviewed. The precision and accuracy were acceptable, based on the percent recovery values for spiked analytes (MS/MSD and standard spike analyses) and the relative percent difference values for duplicate (MS/MSD, high spike duplicate, and field duplicate) analyses. All positive results were estimated (J), due to a high percent recovery value in the initial calibration verification (ICV) analysis. No other qualifiers were issued.

One lot of data for nitroguanidine analyses in water samples using Method UW29 was reviewed. The lot consisted of a single equipment rinsate blank. Nitroguanidine was not detected in the blank. The precision and accuracy were acceptable, based on the percent recovery values for most spiked analytes (MS/MSD and standard spike analyses) and the relative percent difference values for duplicate (MS/MSD, high spike duplicate, and field duplicate) analyses. There was a high percent recovery value in the initial calibration verification (ICV) analysis, however, there were no positive results in the sample. No qualifiers were issued.

### PETN/Nitroglycerin Analyses

One lot of data for PETN and nitroglycerin analyses in soil samples using Method LW27 was reviewed. The accuracy was acceptable, based on the percent recovery values for most spiked analytes in the low and high spikes, and the MS/MSD analyses. The percent recovery value for nitroglycerin was slightly greater than the upper control limit in the MS analysis. No action was

taken, as nitroglycerin was not detected in the samples, and as all other recoveries were acceptable. The precision was acceptable, based upon the relative percent difference values for duplicate (MS/MSD and high spike duplicate) analyses. No qualifiers were issued.

One lot of data for PETN and nitroglycerin analyses in water samples using Method UW27 was reviewed. The lot consisted of a single equipment rinsate blank. PETN and nitroglycerin were not detected in the blank. The percent recovery values in the calibration verification (CCV) analyses were less than the lower control limit of 90%. All CRL were estimated (UJ) due to the possible low bias. The accuracy was acceptable, based on the percent recovery values for most spiked analytes in the low and high spikes. MS/MSD analyses were not performed. The percent recovery value for PETN was slightly greater than the upper control limit in the low spike analysis. No action was taken, as PETN was not detected in the samples, and as all other recoveries were acceptable. The precision was acceptable, based upon the relative percent difference values for the high spike duplicate analyses.

### **Ethyl Centralite**

One lot of data for ethyl centralite analyses in soil samples, and one lot of data for water samples using DataChem laboratory standard operating procedure (SOP) number OL-DC-EC were reviewed. The water lot consisted of field and equipment rinsate blanks. Ethyl centralite was not detected in the blanks. The precision and accuracy were acceptable for these lots, based on the percent recovery values for spiked analytes in the MS/MSD and standard spike analyses, and the relative percent difference values for MS/MSD analyses. No problems were noted, and no qualifiers were issued.

#### **Perchiorate**

One lot of data for perchlorate analyses in soil samples, and one lot of data for water samples using DataChem laboratory SOP number IC-DC-ClO4 were reviewed. The water lot consisted of a single equipment rinsate blank. Perchlorate was not detected in the blank. The accuracy was acceptable for these lots, based on the percent recovery values for most spiked analytes in the MS/MSD and standard spike analyses. The MS/MSD percent recovery values for the soil lot (SWBI) were slightly less than the recommended lower control limit of 75%. Perchlorate was not detected in the associated samples, and all perchlorate detection limits were estimated (UJ). The precision was acceptable, based on the relative percent difference values in the MS/MSD set. MS/MSD analyses were not performed for the water lot, AWBH. The precision could not be evaluated for this lot.

# **Conventional Parameter Analyses**

One lot each of data for cyanide, nitrate, and sulfate analyses in soil samples were reviewed. The analyses were performed using methods KY15, KF17, and KT07 (respectively). The accuracy

was acceptable for these lots, based on the percent recovery values for most spiked analytes in the MS/MSD and standard spike analyses. For the sulfate analyses, the percent recoveries were slightly below the lower control limit in the low spike and one high spike analysis. No qualifiers were recommended. Precision was acceptable for all soil lots, based on the relative percent difference values in the MS/MSD analyses.

One lot each of data for cyanide, nitrate, and sulfate analyses in water samples were reviewed. The analyses were performed using methods TY23, LL8, and TT09 (respectively). The water samples consisted of equipment rinsate blanks. Nitrates were detected in the rinsate blank. The nitrate concentrations reported in the soil samples were all greater than the action levels, and no qualifiers were issued. Cyanide and sulfates were not detected in the blanks. The accuracy was acceptable for these lots, based on the percent recovery values for most spiked analytes in the standard spike analyses. For the sulfate analyses, the percent recoveries were slightly greater than the upper control limit in one high spike analysis. No qualifiers were recommended. MS/MSD analyses were not submitted for any water lot. Precision was acceptable, based on the relative percent difference values calculated for the duplicate analyses of the high spikes.

SWMU 40-vii

# TIER II DATA QUALITY ASSESSMENT SEMIVOLATILE ORGANIC COMPOUNDS ANALYSES: SOIL METHOD: LM25 LOT: AVSY

### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for this lot were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package. Results for matrix spike/matrix spike duplicate (MS/MSD) analyses were included, although they are not required by USATHAMA 11-41 for Class 1A analyses. Transfer files and DataChem QA Status Reports were provided.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; correction fluid or tape was not found on any of the raw data; proper units for numerical values were used; the laboratory notebook pages and chromatograms were signed and dated by the analyst.

### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete for this lot. All samples listed were analyzed and all forms were signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QUALITY CONTROL

The laboratory submitted data for one pair of field duplicates, Samples ARS-95-10 (laboratory number 016 UC04453) and ARS-95-10 FD (laboratory number 017 UC04457, listed on the COC form as ARS-95-11). One target compound (diethylphthalate) was detected in only one of the duplicate samples, ARS-95-10. A relative percent difference (RPD) value could not be calculated. Seven unknown compounds were detected in both samples. The seven RPD values calculated for the unknown compounds ranged from 0.3% to 107.5%, with two values greater than the control limit of 50%. The reported concentrations for the unknown compounds are estimates, and a higher degree of variability is common. No data were qualified based on field duplicate precision.

No data for samples identified as field or equipment blanks were submitted with this lot.



#### IV. TECHNICAL ASSESSMENT

#### Sample Holding Times: ACCEPTABLE/ All criteria met. 1.0

The extraction holding-time criterion listed in Method LM25 for soil matrices is 7 days from date of sampling to date of extraction. All samples in this lot were extracted 6 days after sampling. The analytical holding time criterion listed in Method LM25 for soil matrices is 40 days from date of extraction. All analyses were performed within 11 days of extraction

#### 2.0 GC/MS Instrument Performance Check: ACCEPTABLE/All criteria met.

Decafluorotriphenylphosphine (DFTPP) was analyzed at the beginning of each calibration sequence, as required. All appropriate DFTPP data were provided and all results were within the specified control limits listed in the data package.

Initial and Continuing Calibration: ACCEPTABLE/With the following exceptions. 3.0 (Qualification Codes 5A and 5B)

Qualified Data: See the DATA QUALIFIER SUMMARY TABLE

#### Discussion:

The initial calibration (ICAL) was performed at the proper frequency. Seven standards were used, meeting USATHAMA PAM 11-41 criterion for Class 1A. Percent relative standard deviation (%RSD) values were calculated by the reviewer for calibration check compounds (CCC), system performance check compounds (SPCC), and compounds for which positive results were reported in samples. All calculated %RSD values were less than the 30% upper control limit, except pentachlorophenol (PCP). When the response for the low concentration ICAL standard (5 µg/mL) was eliminated from the calculation, the %RSD value for PCP was less than 30%. This indicates that the PCP response is not stable at lower concentrations.

The certified reporting limit (CRL) for PCP is 0.76 µg/g (uncorrected for moisture content). The PCP response is not stable in the initial calibration standards with concentrations less than 20 μg/mL (equivalent to 1.25 μg/g). PCP was not detected in any sample. All reported PCP CRL are estimated (UJ-5A) because of the possible low bias caused by poor instrument sensitivity.

Several compounds had relative response factor (RRF) values less than 0.05 in the ICAL and continuing calibrations (CCAL). Eight of these compounds (β-BHC, endosulfan I, endosulfan II, δ-BHC, endrin, heptachloroepoxide, chlordane, and endrin ketone) historically have low response during GC/MS analysis. These compounds were judged by assessing the relative stability of the compound, as determined by the %RSD values in the ICAL standards. The eight compounds were judged as stable, and no qualifiers were assigned.

The RRF values for three compounds (4,6-dinitro-2-methylphenol, pentachlorophenol, and kepone) were less than 0.05 in the ICAL standard, with a concentration that is nearest the respective CRL for the compounds. The RRF values for these compounds are greater than 0.05



in all standards at concentrations greater than the CRL. This indicates poor sensitivity for the compound at concentrations equivalent to the CRL. The CRL were consequently qualified as estimated (UJ-5A). The RRF values of benzidine in the ICAL and CCAL were less than 0.05 and judged unstable, based upon the high %RSD (55%) and %D values. The CRL in associated samples were rejected (R-5A, 5B).

Nine compounds (PCB-1016, PCB-1221, PCB-1232, PCB-1242, PCB-1248, PCB-1254, PCB-1260, PCB-1262, and toxaphene) were not included in the ICAL, any of the CCAL, and were not part of the list of compounds scanned for in any sample. One compound (aniline) was reported as not detected in any of the ICAL standards. No positive results for these compounds were reported for any sample. The CRL for the PCB compounds and toxaphene were rejected (R-5A, 5B). The CRL for aniline were also rejected (R-5A).

CCAL were run at the correct frequency (before and after sample analyses) for all analytical sequences with this lot. All daily calibrations met the Method LM25 criteria.

All of the CCAL had several percent difference (%D) values greater than the ±25% control Compounds with outlying %D values are listed in the Data Quality Assessment Worksheets. There were no positive results in any sample for compounds associated with a %D outlier. A negative outlying %D value indicates an increase in instrument sensitivity and potential positive bias. For the non-detects, the CRL for compounds associated with a negative %D value were judged not significantly affected, and no action was taken. A positive %D value indicates a loss in instrument sensitivity. The CRL for compounds with a positive %D value greater than 50% are qualified to reflect the possible low bias. Benzidine was the only compound with a positive %D value greater than 50% in one CCAL (at +50.6%). As the CRL of benzidine were already rejected (R-5A, 5B) due to low RRF values, no further action was taken.

4.0 Blank Analyses: ACCEPTABLE/With the following exceptions. (Qualification Code 7)

Qualified Data: See the DATA QUALIFIER SUMMARY TABLE

#### Discussion:

The method blank was analyzed at the proper frequency (one for each lot). No target compounds were detected in the blank, however, three unknown compounds were reported. Action levels of ten times the method blank concentration were used to evaluate sample results. Associated sample results for the unknown compounds at concentrations less than the action levels were qualified as R-7.

#### 5.0 Surrogate Recovery: ACCEPTABLE/With the following discussion.

Surrogate compound percent recovery (%R) values were submitted and reviewed. For data assessment purposes, the surrogate %R values were compared to the limits specified in the EPA Contract Laboratory Program (CLP) 3/90 Statement Of Work (SOW). The CLP SOW does not specify recovery limits for three of the USATHAMA-specific surrogate compounds



(1,3-dichlorobenzene-d4, di-n-octylphthalate-d4, and diethylphthalate-d4). For these compounds, a recovery range of 20% to 130% was used to assess the field sample results. The range is the same as the range recommended in the CLP SOW for new surrogate compounds. All surrogate %R values were within the limits specified by EPA CLP 3/90 SOW. For surrogate compounds not specified in the EPA CLP 3/90 SOW, all %R values were within the 20% to 130% recovery range.

It was also noted that in the 16 field sample analyses, all analyses each had from two-to-seven %R values outside the acceptance range specified by the control charts. The surrogate recovery limits and outliers are listed in the Data Quality Screening Tool Summary. As the surrogate %R values were not significantly outside the control chart limits, no qualifiers were issued to the samples based on control chart surrogate %R value outliers.

# 6.0 Matrix Spike/Matrix Spike Duplicate Sample Analyses: ACCEPTABLE/All criteria met.

Sample ARS-95-11 was selected by the laboratory for matrix spike/matrix spike duplicate (MS/MSD) analyses. No quality control criteria for MS/MSD analyses are specified in USATHAMA PAM 11-41 or the laboratory method. All spiking compounds in the MS/MSD analyses satisfied EPA %R and RPD criteria. No calculation or transcription errors were found.

### 7.0 Laboratory Control Sample: ACCEPTABLE/With the following discussion.

Raw data for laboratory control sample (LCS) QC-105129-1 were submitted by the laboratory. Since no LCS results summary form was provided in the data package, and as all MS/MSD results were acceptable, an evaluation of LCS results was not performed.

#### 8.0 Internal Standards Performance: ACCEPTABLE/All criteria met.

Analysis of areas and retention times for internal standards was conducted (see Data Quality Assessment Worksheets). No quality control criteria for internal standards are specified in USATHAMA PAM 11-41 or the laboratory method. For data assessment purposes, the criteria from *National Functional Guidelines* (U.S. EPA, 1994) was used to assess the internal standards.

All internal standard areas were within the acceptance window of 50% to 200% of the continuing calibration internal standard area. All retention times were within ±30 seconds of the continuing calibration internal standard retention time.

### 9.0 Compound Identification: ACCEPTABLE/All criteria met.

All target compound identifications were reviewed and were acceptable.

# 10.0 Compound Quantitation and Certified Reporting Limits: ACCEPTABLE/AII criteria met.

The quantitation of target analytes were reviewed by recalculation. See the Data Quality Assessment Worksheets for an example of compound quantitation. The certified reporting limits met those listed in Method LM25. No transcription errors were noted.

**11.0 Unknown Compounds:** ACCEPTABLE/With the following discussion. (Qualification Codes 7 and 14)

Qualified Data: See the DATA QUALIFIER SUMMARY TABLE

#### Discussion:

Mass spectral library searches to identify unknown (non-target) compounds were performed as required. As mentioned in **Section 4.0**, unknown compounds also found in the associated method blank were qualified as R-7. All remaining unknowns were qualified as estimated with tentative identification (JN-14).

### 12.0 System Performance: ACCEPTABLE/All criteria met.

No signs of degraded instrument performance were observed. The analytical system was judged to have been in tune, within control, and stable during the course of these analyses.

#### V. OVERALL ASSESSMENT

On the basis of this evaluation, the laboratory followed the specified analytical method.

Laboratory precision was acceptable according to MS/MSD and most field duplicate RPD values. Accuracy was acceptable, as demonstrated by surrogate spike and MS/MSD recovery values.

Data qualifiers were assigned as a result of ICAL and CCAL criteria outliers, instrument sensitivity concerns noted in the initial calibration standards, and method blank contamination (of unknown compounds). Remaining unknowns were qualified JN.

Data that are rejected are unusable for any purpose. All other data, as qualified, are acceptable for use.

Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
ARS-95-01	003 UC04398	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARS-95-01	003 UC04398	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARS-95-01	003 UC04398	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARS-95-01	003 UC04398	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARS-95-01	003 UC04398	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARS-95-01	003 UC04398	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARS-95-01	003 UC04398	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARS-95-01	003 UC04398	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARS-95-01	003 UC04398	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARS-95-01	003 UC04398	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARS-95-01	003 UC04398	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARS-95-01	003 UC04398	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARS-95-01	003 UC04398	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARS-95-01	003 UC04398	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARS-95-01	003 UC04398	SOIL	LM25	UNK562	7.00	SB	R-7	UGG
ARS-95-01	003 UC04398	SOIL	LM25	UNK642	0.600	SB	R-7	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	UNK562	10.0	SB	R-7	UGG
ARB-95-01B	004 UC04402	SOIL	LM25	UNK642	0.700	SB	R-7	UGG
ARS-95-02	005 UC04406	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARS-95-02	005 UC04406	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARS-95-02	005 UC04406	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARS-95-02	005 UC04406	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARS-95-02	005 UC04406	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARS-95-02	005 UC04406	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARS-95-02	005 UC04406	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG

8909-10						Lab	DV	
Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Qualifier	Qualifier	Units
ARS-95-02	005 UC04406	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARS-95-02	005 UC04406	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARS-95-02	005 UC04406	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARS-95-02	005 UC04406	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARS-95-02	005 UC04406	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARS-95-02	005 UC04406	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARS-95-02	005 UC04406	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARS-95-02	005 UC04406	SOIL	LM25	UNK562	6.00	SB	R-7	UGG
ARS-95-02	005 UC04406	SOIL	LM25	UNK642	0.600	SB	R-7	UGG
ARS-95-03	006 UC04413	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARS-95-03	006 UC04413	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARS-95-03	006 UC04413	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARS-95-03	006 UC04413	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARS-95-03	006 UC04413	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARS-95-03	006 UC04413	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARS-95-03	006 UC04413	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARS-95-03	006 UC04413	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARS-95-03	006 UC04413	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARS-95-03	006 UC04413	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARS-95-03	006 UC04413	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARS-95-03	006 UC04413	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARS-95-03	006 UC04413	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARS-95-03	006 UC04413	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARS-95-03	006 UC04413	SOIL	LM25	UNK562	7.00	SB ·	R-7	UGG
ARS-95-03	006 UC04413	SOIL	LM25	UNK642	0.700	SB	R-7	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG

Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
ARB-95-03B	007 UC04417	SOIL	LM25	UNK563	10.0	SB	R-7	UGG
ARB-95-03B	007 UC04417	SOIL	LM25	UNK642	0.300	SB	R-7	UGG
ARS-95-04	008 UC04421	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARS-95-04	008 UC04421	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARS-95-04	008 UC04421	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARS-95-04	008 UC04421	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARS-95-04	008 UC04421	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARS-95-04	008 UC04421	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARS-95-04	008 UC04421	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARS-95-04	008 UC04421	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARS-95-04	008 UC04421	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARS-95-04	008 UC04421	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARS-95-04	008 UC04421	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARS-95-04	008 UC04421	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARS-95-04	008 UC04421	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARS-95-04	008 UC04421	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARS-95-04	008 UC04421	SOIL	LM25	UNK562	6.00	SB	R-7	UGG
ARS-95-04	008 UC04421	SOIL	LM25	UNK642	0.800	SB	R-7	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	UNK562	5.00	SB	R-7	UGG
ARB-95-04B	009 UC04425	SOIL	LM25	UNK642	0.500	SB	R-7	UGG
ARS-95-05	010 UC04429	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARS-95-05	010 UC04429	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARS-95-05	010 UC04429	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARS-95-05	010 UC04429	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARS-95-05	010 UC04429	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG

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Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
ARS-95-05	010 UC04429	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARS-95-05	010 UC04429	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARS-95-05	010 UC04429	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARS-95-05	010 UC04429	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARS-95-05	010 UC04429	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARS-95-05	010 UC04429	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARS-95-05	010 UC04429	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARS-95-05	010 UC04429	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARS-95-05	010 UC04429	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARS-95-05	010 UC04429	SOIL	LM25	UNK563	20.0	SB	R-7	UGG
ARS-95-05	010 UC04429	SOIL	LM25	UNK642	0.400	SB	R-7	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	UNK562	10.0	SB	R-7	UGG
ARB-95-05B	011 UC04433	SOIL	LM25	UNK642	0.500	SB	R-7	UGG
ARS-95-06	012 UC04437	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARS-95-06	012 UC04437	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARS-95-06	012 UC04437	SOIL	LM25	BENZID	ND 0.130	R		UGG
ARS-95-06	012 UC04437	SOIL	LM25	KEP	ND 1.30	R		UGG
ARS-95-06	012 UC04437	SOIL	LM25	PCB016	LT 0.320			UGG
ARS-95-06	012 UC04437	SOIL	LM25	PCB221	ND 0.320			UGG
ARS-95-06	012 UC04437	SOIL	LM25	PCB232	ND 0.320			UGG
ARS-95-06	012 UC04437	SOIL	LM25	PCB242	ND 0.320			UGG
ARS-95-06	012 UC04437	SOIL	LM25	PCB248	ND 0.320			UGG
ARS-95-06	012 UC04437	SOIL	LM25	PCB254	ND 0.320			UGG
ARS-95-06	012 UC04437	SOIL	LM25	PCB260	LT 0.790			UGG
ARS-95-06	012 UC04437	SOIL	LM25	PCB262	LT 6.30			UGG

Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
ARS-95-06	012 UC04437	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARS-95-06	012 UC04437	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARS-95-06	012 UC04437	SOIL	LM25	UNK562	5.00	SB	R-7	UGG
ARS-95-06	012 UC04437	SOIL	LM25	UNK642	0.500	SB	R-7	UGG
ARS-95-07	013 UC04441	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARS-95-07	013 UC04441	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARS-95-07	013 UC04441	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARS-95-07	013 UC04441	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARS-95-07	013 UC04441	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARS-95-07	013 UC04441	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARS-95-07	013 UC04441	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARS-95-07	013 UC04441	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARS-95-07	013 UC04441	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARS-95-07	013 UC04441	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARS-95-07	013 UC04441	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARS-95-07	013 UC04441	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARS-95-07	013 UC04441	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARS-95-07	013 UC04441	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARS-95-07	013 UC04441	SOIL	LM25	UNK562	9.00	SB	R-7	UGG
ARS-95-07	013 UC04441	SOIL	LM25	UNK642	0.800	SB	R-7	UGG
ARS-95-08	014 UC04445	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARS-95-08	014 UC04445	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARS-95-08	014 UC04445	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARS-95-08	014 UC04445	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARS-95-08	014 UC04445	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARS-95-08	014 UC04445	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARS-95-08	014 UC04445	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARS-95-08	014 UC04445	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARS-95-08	014 UC04445	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG .
ARS-95-08	014 UC04445	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARS-95-08	014 UC04445	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARS-95-08	014 UC04445	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARS-95-08	014 UC04445	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARS-95-08	014 UC04445	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARS-95-08	014 UC04445	SOIL	LM25	UNK562	6.00	SB	R-7	UGG
ARS-95-08	014 UC04445	SOIL	LM25	UNK642	0.400	SB	R-7	UGG
ARS-95-09	015 UC04449	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARS-95-09	015 UC04449	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARS-95-09	015 UC04449	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG

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Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
ARS-95-09	015 UC04449	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARS-95-09	015 UC04449	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARS-95-09	015 UC04449	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARS-95-09	015 UC04449	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARS-95-09	015 UC04449	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARS-95-09	015 UC04449	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARS-95-09	015 UC04449	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARS-95-09	015 UC04449	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARS-95-09	015 UC04449	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARS-95-09	015 UC04449	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARS-95-09	015 UC04449	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARS-95-09	015 UC04449	SOIL	LM25	UNK562	7.00	SB	R-7	UGG
ARS-95-09	015 UC04449	SOIL	LM25	UNK642	0.500	SB	R-7	UGG
ARS-95-10	016 UC04453	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARS-95-10	016 UC04453	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARS-95-10	016 UC04453	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARS-95-10	016 UC04453	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARS-95-10	016 UC04453	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARS-95-10	016 UC04453	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARS-95-10	016 UC04453	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARS-95-10	016 UC04453	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARS-95-10	016 UC04453	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARS-95-10	016 UC04453	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARS-95-10	016 UC04453	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARS-95-10	016 UC04453	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARS-95-10	016 UC04453	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARS-95-10	016 UC04453	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARS-95-10	016 UC04453	SOIL	LM25	UNK562	5.00	SB	R-7	UGG
ARS-95-10	016 UC04453	SOIL	LM25	UNK642	0.600	SB	R-7	UGG
ARS-95-11	017 UC04457	SOIL	LM25	46DN2C	LT 0.800	D	UJ-5A	UGG
ARS-95-11	017 UC04457	SOIL	LM25	ANIL	ND 0.130	RD	R-5A	UGG
ARS-95-11	017 UC04457	SOIL	LM25	BENZID	ND 0.130	RD	R-5A, 5B	UGG
ARS-95-11	017 UC04457	SOIL	LM25	KEP	ND 1.30	RD		UGG
ARS-95-11	017 UC04457	SOIL	LM25	PCB016	LT 0.320			UGG
ARS-95-11	017 UC04457	SOIL	LM25	PCB221	ND 0.320		R-5A, 5B	UGG
ARS-95-11	017 UC04457	SOIL	LM25	PCB232	ND 0.320	RD		UGG
ARS-95-11	017 UC04457	SOIL	LM25	PCB242	ND 0.320			UGG
ARS-95-11	017 UC04457	SOIL	LM25	PCB248	ND 0.320		<del></del>	UGG
ARS-95-11	017 UC04457	SOIL	LM25	PCB254	ND 0.320			UGG

Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
ARS-95-11	017 UC04457	SOIL	LM25	PCB260	LT 0.790	D	R-5A, 5B	UGG
ARS-95-11	017 UC04457	SOIL	LM25	PCB262	LT 6.30	D	R-5A, 5B	UGG
ARS-95-11	017 UC04457	SOIL	LM25	PCP	LT 0.760	D	UJ-5A	UGG
ARS-95-11	017 UC04457	SOIL	LM25	TXPHEN	LT 12.0	D	R-5A, 5B	UGG
ARS-95-11	017 UC04457	SOIL	LM25	UNK562	10.0	SBD	R-7	UGG
ARS-95-11	017 UC04457	SOIL	LM25	UNK642	0.900	SBD	R-7	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	UNK562	7.00	SB	R-7	UGG
ARB-95-02B	020 UC04465	SOIL	LM25	UNK642	0.500	SB	R-7	UGG

# TIER I DATA QUALITY ASSESSMENT SEMIVOLATILE ANALYSES: WATER METHOD: UM25

LOT: AVSI

Analytical data for one water sample were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The sample was collected on November 30, 1995, and was analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
GC/MS Instrument Performance Check

- Initial and Daily Calibration
   Blank Analyses
- \* Surrogate Recovery
  Internal Standards Performance
  Compound Identification
  Compound Quantitation and Certified Reporting Limits (CRL)
  Unknown Compounds
  System Performance

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# Initial and Daily Calibration (Qualification Codes 5A and 5B)

The initial calibration (ICAL) was performed at the proper frequency. Seven standards were used, meeting USATHAMA PAM 11-41 criterion for Class 1A. Percent relative standard deviation (%RSD) values were calculated by the reviewer for calibration check compounds (CCC) and system performance check compounds (SPCC). All calculated %RSD values were less than the 30% upper control limit, except pentachlorophenol (PCP). When the response for the low concentration ICAL standard (5  $\mu$ g/mL) was eliminated from the calculation, the %RSD value for PCP was less than 30%. This indicates that the PCP response is not stable at lower concentrations.

The certified reporting limit (CRL) for PCP is 9.1  $\mu$ g/L. The PCP response is not stable in the initial calibration standards with concentrations less than 20  $\mu$ g/L. PCP was not detected in the sample. The reported PCP CRL is estimated (UJ-5A) because of possible low bias caused by poor instrument sensitivity.

Several compounds had relative response factor (RRF) values less than 0.05 in the ICAL and continuing calibrations (CCAL). Eight of these compounds ( $\beta$ -BHC, endosulfan I, endosulfan II,  $\delta$ -BHC, endrin, heptachloroepoxide, chlordane, and endrin ketone) historically have low response during GC/MS analysis. These compounds were judged by assessing the relative stability of the compound, as determined by the %RSD values in the ICAL standards. The eight compounds were judged as stable, and no qualifiers were assigned.

The RRF values for three compounds (4,6-dinitro-2-methylphenol, pentachlorophenol, and kepone) were less than 0.05 in the ICAL standard with a concentration that is nearest the respective CRL for the compounds. The RRF values for these compounds are greater than 0.05 in all standards at concentrations greater than the CRL. This indicates poor sensitivity for the compound at concentrations equivalent to the CRL. The CRL were consequently qualified as estimated (UJ-5A). The RRF values of benzidine in the ICAL and CCAL were less than 0.05 and judged unstable, based upon the high %RSD (55%) and %D values. The CRL in associated samples were rejected (R-5A, 5B).

Nine compounds (PCB-1016, PCB-1221, PCB-1232, PCB-1242, PCB-1248, PCB-1254, PCB-1260, PCB-1262, and toxaphene) were not included in the ICAL, any of the CCAL, and were not part of the list-of-compounds scanned for in any sample. One compound (aniline) was reported as not detected in any of the ICAL standards. No positive results for these compounds were reported for any sample. The CRL for the PCB compounds and toxaphene were rejected (R-5A, 5B). The CRL for aniline were also rejected (R-5A).

CCAL were run at the correct frequency (before and after sample analyses) for all analytical sequences with this lot. All daily calibrations met the Method UM25 criteria.

All of the CCAL had several percent difference (%D) values greater than the ±25% control limits. Compounds with outlying %D values are listed in the Data Quality Assessment Worksheets. There were no positive target compound results for compounds associated with a %D outlier. A negative outlying %D value indicates an increase in instrument sensitivity and potential positive bias. For the non-detects, the CRL for compounds associated with a negative %D value were judged not significantly affected, and no action was taken. A positive %D value indicates a loss in instrument sensitivity. The CRL for compounds with a positive %D value greater than 50% are qualified to reflect the possible low bias. Benzidine was the only compound with a positive %D value greater than 50% in one CCAL (at +50.6%). As the CRL of benzidine were already rejected (R-5A,5B) for low RRF values, no further action was taken.

# Surrogate Recovery

Surrogate compound percent recovery (%R) values were submitted and reviewed. For data assessment purposes, the surrogate %R values were compared to the limits specified in the EPA Contract Laboratory Program (CLP) 3/90 Statement Of Work (SOW). The CLP SOW does not specify recovery limits for three of the USATHAMA-specific surrogate compounds (1,3-di-chlorobenzene-d4, di-n-octylphthalate-d4, and diethylphthalate-d4). For these compounds, a recovery range of 16% to 110% was used to assess the field sample results. The range is the

same as the range recommended in the CLP SOW for new base/neutral surrogate compounds. All surrogate %R values were within the limits specified by EPA CLP 3/90 SOW for Sample 3ER-70. For surrogate compounds not specified in the EPA CLP3/90 SOW, all %R values were within the 16% to 110% recovery range for Sample 3ER-70. Three surrogate %R values for the method blank were greater than control limits. The outliers are listed in the Data Quality Assessment Worksheets. Qualifiers are not assigned to method blanks.

It was also noted that Sample 3ER-70 contained two %R values outside the acceptance range specified by the control charts. The surrogate recovery limits and outliers are listed in the Data Quality Screening Tool summary. No qualifiers were issued to the samples based on control chart surrogate %R value outliers.

### Sample Quantitation and Certified Reporting Limits

The certified reporting limits (CRLs) met those listed in Method UM25, except for three compounds (naphthalene, 2,3,6-trichlorophenol, and di-n-octylphthalate). The reported detection limits for these compounds were slightly greater than the method CRL. See the Data Quality Screening Tool print-out for more details. No action was taken, other than to note the discrepancy.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was not evaluated, as no MS/MSD, laboratory duplicate, or field duplicate analyses were performed. Accuracy was acceptable, as demonstrated by most of the surrogate %R values being within control limits.

Data qualifiers were assigned as a result of ICAL and CCAL criteria outliers, and instrument sensitivity concerns noted in the initial calibration standards.

Data that are rejected are unusable for any purpose. All other data, as qualified, are acceptable for use.

Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
3ER-70	002 UC04463	WATER	UM25	46DN2C	ND 50.0	R	UJ-5A	UGL
3ER-70	002 UC04463	WATER	UM25	ANIL	ND 2.00	R	R-5A	UGL
3ER-70	002 UC04463	WATER	UM25	BENZID	ND 2.00	R	R-5A, 5B	UGL
3ER-70	002 UC04463	WATER	UM25	KEP	ND 20.0	R	UJ-5A	UGL
3ER-70	002 UC04463	WATER	UM25	PCB016	ND 9.10	R	R-5A, 5B	UGL
3ER-70	002 UC04463	WATER	UM25	PCB221	ND 9.10	R	R-5A, 5B	UGL
3ER-70	002 UC04463	WATER	UM25	PCB232	ND 9.10	R	R-5A, 5B	UGL
3ER-70	002 UC04463	WATER	UM25	PCB242	ND 9.10	R	R-5A, 5B	UGL
3ER-70	002 UC04463	WATER	UM25	PCB248	ND 9.10	R	R-5A, 5B	UGL
3ER-70	002 UC04463	WATER	UM25	PCB254	ND 9.10	R	R-5A, 5B	UGL
3ER-70	002 UC04463	WATER	UM25	PCB260	ND 13.0		R-5A, 5B	UGL
3ER-70	002 UC04463	WATER	UM25	PCP	LT 9.10		UJ-5A	UGL
3ER-70	002 UC04463	WATER	UM25	TXPHEN	ND 17.0			UGL

# TIER II DATA QUALITY ASSESSMENT EXPLOSIVES ANALYSES: WATER

METHOD: LW23 LOT: AVNC

### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for this lot were provided by the laboratory to meet USATHAMA PAM-11-41 requirements for this data package.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; no correction fluid or tape was found on any raw data; the proper units for numerical values were used; and, all laboratory notebook pages and strip chart printouts were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete and all samples listed were analyzed. All forms were signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples. All forms were signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, transfer files, laboratory notebooks, and the raw data. No discrepancies were found.

#### III. FIELD QUALITY CONTROL

One pair of field duplicate samples (ARP-95-03C and ARP-95-03CFD) from this lot was identified as a field quality control sample set. Target explosive compounds were not detected in the field duplicate samples at concentrations greater than or equal to the reporting limits. Field duplicate relative percent difference (RPD) values were not calculable.

No field equipment blanks were submitted for this lot.

#### IV. TECHNICAL ASSESSMENT

#### 1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples in this lot were extracted within 7 days of collection and were analyzed within 15 days of extraction. For each sample, the 7-day extraction holding time and 40-day analysis holding time limits were met.

#### 2.0 Instrument Calibration: ACCEPTABLE/All criteria met.

The appropriate number of calibration standards were used to generate a standard curve for explosives compounds. Linearity was acceptable for the standard curves. Recalculation results of the regression statistics for the curves agreed with the laboratory values.

### 3.0 Daily Calibration: ACCEPTABLE/With the following discussion.

The results of the daily calibration standard agreed with the initial calibration standard within 15%, except 2,4-dinitrotoluene in one continuing calibration (12/29/95) standard at 15.7%. Since 2,4-dinitrotoluene was not detected in any of the samples, and since the reporting limits were determined to not be affected, no action was taken. The daily calibrations were performed at the proper frequency.

### 4.0 Blank Analysis: ACCEPTABLE/All criteria met.

One method blank was associated with the samples in this lot. Target explosive compounds were not detected in the method blank at concentrations greater than or equal to the reporting limits.

### 5.0 Matrix Spike/Matrix Spike Duplicate Analyses: NOT PERFORMED.

No matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on samples in this lot. No action was taken on this basis.

# 6.0 High Spike and Low Spike Analyses: ACCEPTABLE/With the following discussion.

One low spike and two high spike analyses were performed with this sample lot. The low/high spike percent recovery (%R) values were evaluated based on the control chart upper and lower limits. The high spike %R values for 1,3,5-trinitrobenzene (90.4% and 90.0%) and nitrobenzene (86.6% and 86.2%) were less than the lower control limits of 92.7% for 1,3,5-trinitrobenzene and 92.8% for nitrobenzene. Since these two compounds were not detected in any of the samples, and since the low spike %R values for these two compounds were within the control limits, no qualifiers were assigned on this basis. All other low spike and high spike %R values were within the control limits.

# 7.0 Duplicate Sample Analyses: NOT PERFORMED.

Laboratory duplicate analyses were not performed with this sample lot; however, the RPD values between the two high spike samples were evaluated. The RPD values ranged from 0.1% to 0.46% and were less than the maximum control limits. The laboratory precision was acceptable.

# 8.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data were reviewed for explosive compounds; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

# 9.0 Compound Quantitation and Certified Reporting Limits: ACCEPTABLE/All criteria met.

An evaluation of compound quantitation was performed by recalculating sample results from the raw data. No discrepancies were found. The reporting limit for each analyte was reviewed. All reporting limits matched the certified reporting limit listed in the laboratory SOP.

# 10.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

### V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified methods.

Accuracy was acceptable, as demonstrated by most of the %R values for the laboratory control sample compounds, except where noted. Precision was acceptable, as demonstrated by the RPD values for the high spike analyses.

The data, as reported, are acceptable for use.

# TIER I DATA QUALITY ASSESSMENT EXPLOSIVES ANALYSES: SOIL METHOD: LW23

LOT: AVRO

Analytical data for 25 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The samples were collected from November 29 through 30, 1995, and were analyzed by DataChem.

### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration Daily Calibration Blank Analyses

- Laboratory Control Sample Analyses
- \* Field Duplicate Analyses
- Matrix Spike/Matrix Spike Duplicate Analyses
- \* Compound Identification
  Chromatogram Quality
  Compound Quantitation and Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# **Laboratory Control Sample Analyses**

Laboratory control sample (LCS) analyses were performed at the required frequency. Most percent recovery (%R) and relative percent difference (RPD) values were within control limits. The %R and RPD value outliers are listed in the Data Quality Assessment Worksheets. In the professional judgment of the reviewer, no qualification of the sample results on the basis of the %R values in the LCS analyses was necessary.

# Field Duplicate Analyses

Two field duplicate sets (OBS-95-34/OBS-95-34FD and ARS-95-10/ARS-95-10FD) were analyzed by the laboratory. No positive results were reported in Samples OBS-95-34 or OBS-95-34FD; field duplicate RPD values were not calculable. Positive results for RDX were reported in Samples ARS-95-10 and ARS-95-10FD at concentrations (corrected for moisture) of  $5.34~\mu g/g$  and  $40.9~\mu g/g$ , respectively. The RPD value of RDX was 153.9%, which was greater

than the 50% control limit. Positive results for HMX and tetryl were reported for Sample ARS-95-10FD, but not for ARS-95-10. No qualifiers were assigned based on field duplicate results.

### Matrix Spike/Matrix Spike Duplicate Analyses

Sample ARS-95-10FD was selected for matrix spike/matrix spike duplicate (MS/MSD) analyses. All %R values were within control limits, except for 2,4-dinitrotoluene. The %R values of 2,4-dinitrotoluene in the MS/MSD analyses were greater than the 28% to 89% control limits at 94% and 98%, respectively. In the professional judgment of the reviewer, no qualification of the sample results on the basis of 2,4-dinitrotoluene %R value was necessary. All RPD values were within control limits.

### **Compound Identification**

Several positive results were C-flagged by the laboratory to indicate that the results were confirmed by a second column. A result for RDX in Sample ARS-95-05 was Q-flagged by the laboratory to denote that the compound was not confirmed on the second column because of matrix interference. No action was taken on this basis.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the RPD values of the MS/MSD and the LCS analyses being within control limits. Accuracy was acceptable, as demonstrated by the LCS and MS/MSD %R values being within control limits, except where previously noted.

All data, as reported, are acceptable for use.

# TIER! DATA QUALITY ASSESSMENT EXPLOSIVES ANALYSES: WATER METHOD: UW25

LOT: AVNE

Analytical data for one water sample was reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The sample was collected on November 20, 1995, and was analyzed by DataChem.

### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration Daily Calibration Blank Analyses

\* Laboratory Control Sample Analyses

Compound Identification

Chromatogram Quality

Compound Quantitation and Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# **Laboratory Control Sample Analyses**

Laboratory control sample (LCS) analyses were performed by the laboratory at the required frequency. Three of the percent recovery (%R) values for high spike analyses were greater than the control limits. The %R value outliers are listed in the Data Quality Assessment Worksheets. As the %R values were within the laboratory control limits for these analytes in the low spike analysis, and as these three high spike %R values were reasonable, no qualifiers were assigned on the basis of these LCS results.

#### Overall Assessment

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the LCS analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the compliant LCS %R values, except where previously noted.

All data, as reported, are acceptable for use.

# TIER I DATA QUALITY ASSESSMENT EXPLOSIVES ANALYSES: WATER

METHOD: UW25 LOT: AVRB

Analytical data for three water samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The samples were collected from November 29 through 30, 1995, and were analyzed by DataChem.

#### TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration Daily Calibration Blank Analyses

- Laboratory Control Sample Analyses
   Compound Identification
   Chromatogram Quality
- \* Compound Quantitation and Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

# **Laboratory Control Sample Analyses**

Laboratory control sample (LCS) analyses were performed at the required frequency by the laboratory. Two low spike LCS analytes and one high spike LCS analyte were greater than the laboratory control limits. The %R and RPD value outliers are listed in the Data Quality Assessment Worksheets. As there were no positive results reported in associated samples, no action was taken.

# **Compound Quantitation and Certified Reporting Limits**

The certified reporting limits (CRLs) for RDX in Samples 3ER-69 and 3FB-P were elevated and K-flagged by the laboratory to denote that the CRLs were raised because of interferences. The CRL for 1,3,5-trinitrobenzene in Sample 3ER-70 was also elevated by the laboratory. A positive result for 1,3,5-trinitrobenzene was found in the original analysis of Sample 3ER-70 but was not confirmed on a second column. The 1,3,5-trinitrobenzene result for 3ER-70 was U-flagged by the laboratory. No action was required.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by most of the relative percent difference (RPD) values of the LCS analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the LCS %R values being within control limits, except where previously noted.

All data, as reported, are acceptable for use.

# TIER II DATA QUALITY ASSESSMENT NITROCELLULOSE ANALYSES: SOIL

METHOD: LF05 LOT: AVVU

# I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for this lot were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; correction fluid or tape was not found on any of the raw data; proper units for numerical values were used; the laboratory notebook pages and chromatograms were signed and dated by the analyst.

# II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete for this lot. All samples listed were analyzed and all forms signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples and all forms signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, the transfer files, laboratory notebooks, and the raw data.

### III. FIELD QUALITY CONTROL

The data for one field duplicate set (ARS-95-10/ARS-95-11) were submitted for review. Nitrocellulose was detected in these two samples at concentrations of  $104\,\mu\text{g/g}$  and  $77.8\,\mu\text{g/g}$ , respectively. The relative percent difference (RPD) value was within the control limit of 50% at 28.5%. However, these two nitrocellulose results were qualified as not detected because of the blank contamination.

### IV. TECHNICAL ASSESSMENT

# 1.0 Holding Times: ACCEPTABLE/All criteria met.

Holding times were not listed in the method. All samples in this lot were extracted within 15 days of collection and were analyzed within 3 days of extraction. Sample results were not qualified on this basis.

#### 2.0 Instrument Calibration: ACCEPTABLE/With the following discussion.

The appropriate number of calibration standards were used to generate a least squares model linear standard curve. The correlation coefficient was greater than 0.995, indicated acceptable linearity. The correlation coefficient, the slope and y intercept were calculated by the reviewer. The results of the regression statistics for the curve did not exactly agree with the laboratory values. However, as both the recalculated results and reported results are acceptable, no qualification of sample results was performed by the reviewer.

#### 3.0 Daily Calibration: ACCEPTABLE/All criteria meet.

The results of the daily calibration standard were calculated by the reviewer and agreed with the initial calibration high standard within the 90% to 110% criteria. The daily calibrations were performed at the proper frequency.

#### **4.0** Blank Analysis: ACCEPTABLE/With the following exceptions.

Qualified Data: See the data qualifier table, TABLE AVVU.

#### Discussion:

One method blank was associated with the samples in this lot. Nitrocellulose was quantitated at  $86.7 \,\mu\text{g/g}$ . All associated sample results were less than the action level of  $434 \,\mu\text{g/g}$  and have been qualified as not detected and flagged U-7.

# **5.0** Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/With the following exceptions.

Qualified Data: See the data qualifier table, TABLE AVVU.

#### Discussion:

The laboratory performed matrix spike/matrix spike duplicate (MS/MSD) analyses on Sample ARS-95-11. The DataChem QA Status Report control charts does not specify percent recovery (%R) limits and relative percent difference (RPD) limits for MS/MSD analyses.

The %R values for nitrocellulose of the MS/MSD samples were 22.0% and -21.3%, respectively. Because of the low recovery of this analyte in the MS/MSD analyses, all not detected results (including those qualified as not detected because of blank contamination) in the associated samples were qualified as rejected (R-7, 8). The RPD value for nitrocellulose was within the control limit of 50% at 42.9%.

## **6.0 High Spike and Low Spike Recovery:** ACCEPTABLE/With the following discussion.

The results of the low and two high spike sample results were blank subtracted by the laboratory before the %R values for nitrocellulose were calculated. The %R values were 67.9%, 73.6%, and

89.4% respectively. These values are within the control limits established for this analyte. As the laboratory subtracted the blank from these three samples only and not the field samples, the reviewer recalculated the %R values using the unsubtracted values. Recalculated %R values were 211%, 102%, and 118%, which are all greater than the respective upper control limit. No qualification of data was required as all sample results were previously qualified as not detected.

## 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The raw data were reviewed for nitrocellulose; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

# 8.0 Compound Quantitation and Certified Reporting Limits: ACCEPTABLE/With the following discussion.

An evaluation of compound quantitation was performed by recalculating the sample results from the raw data. Discrepancies were not found. The CRL on the transfer file met those listed in the method.

## 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

## V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified analytical method.

Accuracy was not acceptable, as demonstrated by the %R valufes of the MS/MSD and standard spike recovery values. Precision was acceptable, as demonstrated by the RPD value of the MS/MSD samples.

Data were rejected and assigned an R-7,8 qualifier as a result of low MS/MSD %R values and method blank contamination.

All data are not acceptable for use.

# DATA QUALIFIER SUMMARY TABLE FOR LOT AVVU

#### 8909-10

Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
ARS-95-01	005 UC04395	SOIL	LF05	NC	152		R-7,8	UGG
ARB-95-01B	006 UC04399	SOIL	LF05	NC	87.3		R-7,8	UGG
ARS-95-02	007 UC04403	SOIL	LF05	NC	144		R-7,8	UGG
ARB-95-02B	008 UC04407	SOIL	LF05	NC	88.4		R-7,8	UGG
ARS-95-03	009 UC04410	SOIL	LF05	NC	172		R-7,8	UGG
ARB-95-03B	010 UC04414	SOIL	LF05	NC	173		R-7,8	UGG
ARS-95-04	011 UC04418	SOIL	LF05	NC	63.9		R-7,8	UGG
ARB-95-04B	012 UC04422	SOIL	LF05	NC	149		R-7,8	UGG
ARS-95-05	013 UC04426	SOIL	LF05	NC	180		R-7,8	UGG
ARB-95-05B	014 UC04430	SOIL	LF05	NC	144		R-7,8	UGG
ARS-95-06	015 UC04434	SOIL	LF05	NC	162		R-7,8	UGG
ARS-95-07	016 UC04438	SOIL	LF05	NC	140		R-7,8	UGG
ARS-95-08	017 UC04442	SOIL	LF05	NC	121		R-7,8	UGG
ARS-95-09	018 UC04446	SOIL	LF05	NC	97.3		R-7,8	UGG
ARS-95-10	019 UC04450	SOIL	LF05	NC	148		R-7,8	UGG
ARS-95-11	020 UC04454	SOIL	LF05	NC	111	D	R-7,8	UGG

## TIER I DATA QUALITY ASSESSMENT NITROCELLULOSE: WATER METHOD: UF05

LOT: AVWX

Analytical data for one equipment rinsate blank was reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The sample was collected on November 30, 1995, and was analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

- Technical Holding Times
   Initial Calibration
   Initial and Continuing Calibration Verification
   Blanks (Method, ICB, CCB)
   Standard Spikes
- \* Duplicate Sample
- Spiked Sample Analyses (MS/MSD)
   Certified Reporting Limits (CRL)

#### **Technical Holding Times**

Holding times were not listed in the method. Sample 3ER-70 was extracted 19 days after sample collection and analyzed one day after sample extraction. As the sample is a field equipment rinsate blank, results were not qualified on this basis.

#### **Duplicate Sample**

Duplicate sample analysis was not performed with this sample lot. No qualification of data has been performed as duplicate analysis is not required.

### **Spiked Sample Analyses**

Matrix spike/matrix spike duplicate (MS/MSD) sample analysis was not performed with this sample lot. As the sample is a field equipment rinsate blank, no qualification of data has been performed.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference value of high spike samples. Accuracy was acceptable, as demonstrated by the standard spike samples percent recovery values being within control limits.

## TIER II DATA QUALITY ASSESSMENT NITROGUANIDINE: SOIL METHOD: LW30

LOT: AVRR

#### I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for this lot were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; correction fluid or tape was not found on any of the raw data; proper units for numerical values were used; the laboratory notebook pages and chromatograms were signed and dated by the analyst.

#### II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete for this lot. All samples listed were analyzed and all forms signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples and all forms signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, the transfer files, laboratory notebooks, and the raw data.

#### III. FIELD QUALITY CONTROL

The data for one field duplicate set (ARS-95-10/ARS-95-11) were submitted for review. Field duplicate relative percent difference (RPD) values were less than the 50% RPD control limit at 45.6%.

#### IV. TECHNICAL ASSESSMENT

#### **1.0** Holding Times: ACCEPTABLE/All criteria met.

Holding times were not listed in the method. All samples in this lot were extracted within 4 days of collection and were analyzed within 8 days of extraction. The holding times were judged to be acceptable.

## 2.0 Instrument Calibration: ACCEPTABLE/With the following exception.

Qualified Data: See the DATA QUALIFIER SUMMARY TABLE

#### Discussion:

The appropriate number of calibration standards were used to generate a least squares model linear standard curve. The correlation coefficient was greater than 0.995 indicating acceptable linearity. The correlation coefficient, the slope and y intercept were calculated by the reviewer. The results of the regression statistics for the curve did not exactly agree with the laboratory values. However, as both the reported and recalculated values were acceptable, no qualification of sample results was performed by the reviewer.

The percent recovery (%R) value nitroguanidine in the initial calibration verification (ICV) solution was 125%, which was greater than the upper control limit of 110%. All positive results were qualified as estimated (J-5A).

### 3.0 Daily Calibration: ACCEPTABLE/All criteria met.

The results of the daily calibration standard were calculated by the reviewer and agreed with the initial calibration high standard within the 90% to 110% criteria. The daily calibrations were performed at the proper frequency.

### 4.0 Blank Analysis: ACCEPTABLE/All criteria met.

One method blank was associated with the samples in this lot. Nitroguanidine was not detected in the method blank at concentrations equal to or greater than the certified reporting limit (CRL).

## 5.0 Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/All criteria met.

The laboratory performed matrix spike/matrix spike duplicate (MS/MSD) analyses on Sample ARS-95-11. The %R values of the MS/MSD samples were 113.8% and 112.8%, respectively. These %R values are within the high spike control limits of 91.4% to 136.6%. The relative percent difference (RPD) value of 0.88% was less than the 50% control limit.

## 6.0 High Spike and Low Spike Recovery: ACCEPTABLE/All criteria met.

The %R values of the low and two high spike sample results were within the specified control limits. The RPD value of 10.5% between the two high spike analyses was less than the MS/MSD RPD control limit of 50%.

#### 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data were reviewed for nitroguanidine; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

## 8.0 Compound Quantitation and Certified Reporting Limits: ACCEPTABLE/All criteria met.

An evaluation of compound quantitation was performed by recalculating the sample results from the raw data. Discrepancies were not found. The CRL on the transfer file met those listed in the method.

#### 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

#### V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified analytical method.

Accuracy was acceptable, as demonstrated by the %R values of the MS/MSD and standard spike recovery values. Precision was acceptable as demonstrated by acceptable RPD values.

Qualification of sample data was required because of a high %R value of the ICV solution.

All data, as qualified, are acceptable for use.

# DATA QUALIFIER SUMMARY TABLE FOR LOT AVRR

#### 8909-10

Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
ARS-95-01	005 UC04396	SOIL	LW30	NQ	0.0807		J-5A	UGG
ARS-95-05	013 UC04427	SOIL	LW30	NQ	0.209		J-5A	UGG
ARS-95-09	018 UC04447	SOIL	LW30	NQ	0.350		J-5A	UGG
ARS-95-10	019 UC04451	SOIL	LW30	NQ	0.148		J-5A	UGG
ARS-95-11	020 UC04455	SOIL	LW30	NQ	0.235		J-5A	UGG

## TIER I DATA QUALITY ASSESSMENT NITROGUANIDINE: WATER METHOD: UW29

LOT: AVVS

Analytical data for one equipment rinsate blank was reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The sample was collected on November 30, 1995, and was analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

- \* Technical Holding Times Initial Calibration
- Initial and Continuing Calibration Verification Blanks (Method, ICB, CCB)
   Standard Spikes
- Duplicate Sample
   Spiked Sample Analyses (MS/MSD)
   Certified Reporting Limits (CRL)

## **Technical Holding Times**

Holding times were not listed in the method. Sample 3ER-70 was extracted 12 days after sample collection and analyzed zero day after sample extraction. Sample results were not qualified on this basis.

#### **Initial Calibration Verification**

The initial calibration verification (ICV) percent recovery (%R) value was greater than the upper control limit of 110% at 125.4%. Since nitroguanidine was not detected in any of the samples, and since the not detected results were determined not affected, no action was taken.

#### **Duplicate Sample**

Duplicate sample analysis was not performed with this sample lot. No qualification of data has been performed, since duplicate analysis is not required.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the criteria-compliant relative percent difference (RPD) values of the matrix spike/matrix spike duplicate (MS/MSD) analyses. Accuracy was acceptable, as demonstrated by the MS/MSD and low/high spike %R values being within control limits.



#### Case Narrative

Analysis: Nitroguanidine

Preparation SOP #: UW29 Analysis SOP#: UW29

Lot/Release/SDG#: AVVS

DCL Set ID's: U95-0656-40

Client:

Rust E&I

Account:

03224

Matrix:

Water

General Set Information: There were three samples in lot AVVS.

Method Summary: A portion of the water samples were filtered through a 0.45µ Teflon filter prior to being injected into a HPLC equipped with UV detection. Prior to sample analysis, the instrument was adjusted to the proper operating parameters and allowed to equilibrate until a stable baseline was established. Calibration standards were analyzed and a linear calibration curve was generated from the data. A continuing calibration standard was analyzed at the end of the sample analysis. The response of the continuing calibration standard was verified to be within method limits.

Samples and QCs were analyzed under identical conditions as those used for initial and continuing calibration. Quantitation was based on a calibration curve using the initial calibration standards. Sample results were reported in  $\mu g/L$ .

Sample Preparation: There were no anomalies associated with the preparation of these samples.

Holding Times: All samples were extracted and analyzed within method specified holding times.

Dilution(s): No dilutions were required.

## Method and Sample QC Data:

Laboratory Quality Control Sample: All quality control results were within acceptable limits.

Blank: All Blank samples met QC criteria.

MS/MSD: Matrix spike and matrix spike duplicate samples were prepared using sample UC 04459 (AVVS005). The MS/MSD recoveries were within acceptable limits.

Instrument QC: All initial and continuing calibration samples met method criteria.

Flagging Codes: No data flagging codes were used.

NC/CAR - CPR: No NC/CARs or CPRs were required for this lot.

Miscellaneous Comments: None.

### Sample Calculation:

The slope was taken from the calibration curve for NQ and the area for NQ was taken from sample UC 04459MS (AVVS006)

6228 μg/L of NQ =  $\frac{1000 \text{ mL X } [133180 \text{ (Area) - } 132.2 \text{ (Intercept)}]}{1.0 \text{ L X } 21362 \text{ Slope (area x ml/ug)}}$ 

Kristine M. Kolenz Date

## TIER II DATA QUALITY ASSESSMENT NITROGLYCERIN AND PETN ANALYSES: SOIL METHOD: LW27

LOT: AVRQ

## I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for this lot were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; correction fluid or tape was not found on any of the raw data; proper units for numerical values were used; the laboratory notebook pages and chromatograms were signed and dated by the analyst.

## II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete for this lot. All samples listed on were analyzed and all forms signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples and all forms signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, the transfer files, laboratory notebooks, and the raw data.

#### III. FIELD QUALITY CONTROL

The data for one field duplicate set (ARS-95-10/ARS-95-11) were submitted for review. Nitroglycerin or PETN were not detected in the field duplicate sample at concentrations greater than or equal to the certified reporting limit (CRL). Field duplicate relative percent difference (RPD) values were therefore not calculable.

#### IV. TECHNICAL ASSESSMENT

## 1.0 Holding Times: ACCEPTABLE/All criteria met.

Holding times were not listed in the method. All samples in this lot were extracted within 4 days of collection and were analyzed within 2 days of extraction. Sample results were not qualified on this basis.

## 2.0 Instrument Calibration: ACCEPTABLE/With the following discussion.

The appropriate number of calibration standards were used to generate a least squares model linear standard curve. The correlation coefficient was greater than 0.995, indicated acceptable linearity. The correlation coefficient, the slope and y intercept were calculated by the reviewer. The results of the regression statistics for the curve did not exactly agree with the laboratory values. However, as both the recalculated and reported values were acceptable, no qualification of sample results was performed by the reviewer.

Sample ARS-95-10 was re-analyzed on December 7, 1996. Initial calibration results for this analytical run were not submitted with the data package. No data were qualified on this basis.

#### 3.0 Daily Calibration: ACCEPTABLE/All criteria met.

The results of the daily calibration standard were calculated by the reviewer and agreed with the initial calibration high standard within the 90% to 110% criteria. The daily calibrations were performed at the proper frequency.

#### 4.0 Blank Analysis: ACCEPTABLE/All criteria met.

One method blank was associated with the samples in this lot. Nitroglycerin and PETN were not detected in the method blank at concentrations greater than or equal to the CRL.

## **5.0** Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/With the following discussion.

The laboratory performed matrix spike/matrix spike duplicate (MS/MSD) analyses on Sample ARS-95-11. The percent recovery (%R) values for nitroglycerin of the MS/MSD samples were 102.0% and 108.0%, respectively. The %R values for PETN of the MS/MSD samples were 99.0% and 98.0%, respectively. The MS %R value of nitroglycerin was slightly greater than the high spike upper control limit of 103.9% at 108%. Since the MSD %R and RPD value for nitroglycerin were within the high spike control limits, no action was taken. The %R and RPD values for PETN were within the high spike control limits.

## 6.0 High Spike and Low Spike Recovery: ACCEPTABLE/All criteria met.

The %R values of the low and two high spike sample results were within the specified control limits.

## 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data were reviewed for nitroglycerin and PETN; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

# 8.0 Compound Quantitation and Certified Reporting Limits: ACCEPTABLE/All criteria met.

An evaluation of compound quantitation was performed by recalculating the sample results from the raw data. Discrepancies were not found. The CRLs on the transfer file met those listed in the method.

## 9.0 Chromatogram Quality: ACCEPTABLE/All criteria met.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline.

## V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified analytical method.

Accuracy was acceptable, as demonstrated by the %R values of the MS/MSD and standard spike recovery values. Precision was acceptable as demonstrated by acceptable MS/MSD RPD values.

## TIER I DATA QUALITY ASSESSMENT NITROGLYCERIN AND PETN: WATER METHOD: UW27

LOT: AVRT

Analytical data for one equipment rinsate blank was reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The sample was collected on November 30, 1995, and was analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

- \* Technical Holding Times Initial Calibration
- Initial and Continuing Calibration Verification Blanks (Method, ICB, CCB)
- Standard Spikes
- \* Duplicate Sample
- \* Spiked Sample Analyses (MS/MSD)
  Certified Reporting Limits (CRL)

## **Technical Holding Times**

Holding times were not listed in the method. Sample 3ER-70 was extracted 4 days after sample collection and analyzed 23 days after sample extraction. Sample results were not qualified on this basis.

## **Continuing Calibration Verification**

The percent recovery (%R) values for nitroglycerin and PETN in two continuing calibration verification samples (CCV) ranged from 40.4% to 41.6% and were less than the lower control limit of 90%. The %R value for nitroglycerin in the daily calibration standard was 40.3% which is lower than the control limit of 90%. All results were qualified as estimated (UJ-5B).

## Standard Spikes

The low spike %R value for PETN of 112% was greater than the upper control limit of 102%. As the sample result was not detected no qualification of data was performed.

#### **Duplicate Sample**

Duplicate sample analysis was not performed with this sample lot. No qualification of data has been performed as duplicate analysis is not required.

#### **Spiked Sample Analyses**

Matrix spike/matrix spike duplicate (MS/MSD) sample analysis was not performed with this sample lot. Because the sample is a field equipment rinsate blank, no qualification of data has been performed.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of high spike samples. Accuracy was acceptable, as demonstrated by the standard spike samples %R values being within control limits, except for the low spike of PETN.

Qualification of sample results was required because of low CCV and daily calibration %R values.

All data, as qualified, are acceptable for use.

# DATA QUALIFIER SUMMARY TABLE FOR LOT AVRT

#### 8909-10

Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
3ER-70	005 UC04459	WATER	UW27	NG	LT 1.49		UJ-5B	UGL
3ER-70	005 UC04459	WATER	UW27	PETN	LT 2.00		UJ-5B	UGL

## TIER II DATA QUALITY ASSESSMENT ETHYL CENTRALITE: SOIL METHOD: ECNS

LOT: AVRP

## I. DELIVERABLES AND DOCUMENTATION

All necessary documentation for this lot were provided by the laboratory to meet USATHAMA PAM 11-41 requirements for this data package, with the exception of percent moisture logbook pages. The sample percent moisture values on the transfer files could not be confirmed.

Good documentation practices were observed by the laboratory in the following areas: changes or corrections were struck out by a single line and the entry was initialed and dated by the analyst; correction fluid or tape was not found on any of the raw data; proper units for numerical values were used; the laboratory notebook pages and chromatograms were signed and dated by the analyst.

## II. CHAIN-OF-CUSTODY/SAMPLE IDENTIFICATION

The field Chain-of-Custody forms (COCs) were present and complete for this lot. All samples listed were analyzed and all forms signed and dated. The field COCs indicated no problems with sample receipt conditions.

Laboratory COCs were present and complete for all samples and all forms signed and dated. The laboratory lot and sample identification suffixes were clearly indicated on all laboratory COCs. A minimum of 10% of the field ID and laboratory ID were tracked from the COCs, the transfer files, laboratory notebooks, and the raw data.

#### III. FIELD QUALITY CONTROL

The data for one field duplicate set (ARS-95-10/ARS-95-11) were submitted for review. Ethyl centralite was not detected in the field duplicate samples at concentrations greater than or equal to the certified reporting limit (CRL). Field duplicate relative percent difference (RPD) values were therefore not calculable.

#### IV. TECHNICAL ASSESSMENT

## 1.0 Holding Times: ACCEPTABLE/All criteria met.

All samples in this lot were extracted within 8 days of collection and were analyzed within 5 days of extraction. These holding times were within the method specified holding times of 14 days for sample extraction and 40 for sample analysis.

## 2.0 Instrument Calibration: ACCEPTABLE/With the following discussion.

The appropriate number of calibration standards were used to generate a least-squares-model linear standard curve. The correlation coefficient was greater than 0.995, indicating acceptable linearity. The correlation coefficient, the slope and y intercept were calculated by the reviewer. The results of the regression statistics for the curve did not exactly agree with the laboratory values. However, as both the recalculated results and reported results are acceptable, no qualification of sample results was performed by the reviewer.

## 3.0 Daily Calibration: ACCEPTABLE/ With the following discussion.

The results of the daily calibration standard were calculated by the reviewer and agreed with the initial calibration high standard within the method-specified 75% to 125% recovery (%R) criteria. The daily calibrations (ICV and CHK) were performed at the proper frequency, except for the CHK calibration check standard. Twenty samples were analyzed between CHK1 and CHK2, whereas the method requires the analysis of a CHK standard every 10 samples. However, as all check standards were acceptable, no qualification of data was performed.

#### 4.0 Blank Analysis: ACCEPTABLE/ All criteria met.

One method blank was associated with the samples in this lot. Ethyl centralite was not detected in the method blank at concentrations greater than or equal to the CRL.

# **5.0** Matrix Spike/Matrix Spike Duplicate Analyses: ACCEPTABLE/With the following discussion.

The laboratory performed matrix spike/matrix spike duplicate (MS/MSD) analyses on Sample ARS-95-11. The %R values for ethyl centralite of the MS/MSD samples were 80.0% and 79.2%, respectively. As %R control limits are not established in the method, the ICV and CHK control limits of 75% to 125% were used as advisory control limits. The MS/MSD RPD value for ethyl centralite was within the advisory control limit of less than or equal to 50% at 1.0%.

## 6.0 Laboratory Control Sample Analysis: ACCEPTABLE/With the following discussion.

The %R value of the laboratory control sample (LCS) results was within the ICV and CHK control limits of 75% to 125% at 82.8%.

## 7.0 Compound Identification: ACCEPTABLE/All criteria met.

The chromatograms and raw data were reviewed for ethyl centralite; false negatives or false positives were not found. There were no discrepancies between the raw data and the transfer files.

## 8.0 Compound Quantitation and Certified Reporting Limits: ACCEPTABLE/All criteria met.

An evaluation of compound quantitation was performed by recalculating the sample results from the raw data. Discrepancies were not found. The CRL on the transfer file met those listed in the method.

## 9.0 Chromatogram Quality: ACCEPTABLE/ With the following discussion.

A review of chromatogram quality revealed no problems. The baselines were stable, no electropositive displacement was found, and all early eluting peaks were resolved to the baseline. Sample retention times (RT) did not fall within the laboratory established RT windows of 10.23 to 10.29. No qualification of associated sample data was performed as the peak width of these samples were larger than the established RT windows.

#### V. OVERALL ASSESSMENT/QC SUMMARY

On the basis of this evaluation, the laboratory followed the specified analytical method.

Accuracy was acceptable, as demonstrated by acceptable %R values of the MS/MSD and LCS recovery values. Precision was acceptable as demonstrated by an acceptable MS/MSD RPD value.

## TIER I DATA QUALITY ASSESSMENT ETHYL CENTRALITE: WATER METHOD: ECNW

LOT: AVRS

Analytical data for one equipment rinsate blank was reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The sample was collected on November 30, 1995, and was analyzed by DataChem.

#### TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

Technical Holding Times
Initial Calibration
Initial and Continuing Calibration Verification
Blanks (Method, ICB, CCB)

- Standard Spikes
- \* Duplicate Sample
- Spiked Sample Analyses (MS/MSD)
   Certified Reporting Limits (CRL)

## **Standard Spikes**

A laboratory control sample (LCS) was analyzed with this sample batch. LCS percent recovery (%R) criteria were not specified in the method. For the purpose of data review, 75% to 125% control limits were used. The LCS %R value of 87.6% was within these advisory criteria, so qualification of data has not been performed.

## **Duplicate Sample**

Duplicate sample analysis was not performed with this sample lot. No qualification of data has been performed as duplicate analysis is not required.

## **Spiked Sample Analyses**

The laboratory performed matrix spike/matrix spike duplicate (MS/MSD) sample analysis was performed on Sample 3ER-70. MS/MSD %R control limits were not specified in the method. For the purpose of data review, 75% to 125% control limits were used. The MS/MSD %R values of 88.4% and 96.4%, respectively, were within these control limits. The relative percent difference (RPD) value of 8.7% was less than the advisory RPD control limit of 20%.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the MS/MSD analyses being within the advisory control limit. Accuracy was acceptable, as demonstrated by the MS/MSD and standard spike %R value being within advisory control limits.

## TIER I DATA QUALITY ASSESSMENT PERCHLORATE: SOIL METHOD: PRCL

LOT: AWBI

Analytical data for 16 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The samples were collected on November 30, 1995, and were analyzed by DataChem.

### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
Initial Calibration
Initial and Continuing Calibration Verification
Blanks (Method, ICB, CCB)
Standard Spikes

- Duplicate Sample
- Spiked Sample Analyses (MS/MSD)
   Certified Reporting Limits (CRL)

#### **Duplicate Sample**

Duplicate sample analysis was not performed with this sample lot. No qualification of data has been performed as duplicate analysis is not required and matrix spike/matrix spike duplicate (MS/MSD) analysis was performed.

## **Spiked Sample Analyses**

The laboratory used Sample ARS-95-11 for the MS/MSD analysis. Percent recovery (%R) values of the MS/MSD samples were 68.3% and 65.9%, respectively. These values are less than the laboratory-established %R control limits of 75% to 125%. All sample results have been qualified as estimated (UJ-8) on this basis. The relative percent difference (RPD) value of 4% was less than the laboratory specified RPD control limit of 20%.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the control-limit compliant RPD values of the MS/MSD. Accuracy was acceptable, as demonstrated by the standard spike sample %R value.

Qualification of sample data was required because of MS/MSD %R values less than the lower control limit.

All data, as qualified, are acceptable for use.

# DATA QUALIFIER SUMMARY TABLE FOR LOT AWBI

#### 8909-10

Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
ARS-95-01	003 UC04397	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARB-95-01B	004 UC04401	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARS-95-02	005 UC04405	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARB-95-02B	006 UC04409	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARS-95-03	007 UC04412	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARB-95-03B	008 UC04416	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARS-95-04	009 UC04420	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARB-95-04B	010 UC04424	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARS-95-05	011 UC04428	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARB-95-05B	012 UC04432	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARS-95-06	013 UC04436	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARS-95-07	014 UC04440	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARS-95-08	015 UC04444	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARS-95-09	016 UC04448	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARS-95-10	017 UC04452	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
ARS-95-11	018 UC04456	SOIL	PRCL	CLO4	LT 5.00	D	UJ-8	UGG

# TIER I DATA QUALITY ASSESSMENT PERCHLORATE: WATER

METHOD: PRCL LOT: AWBH

Analytical data for one equipment rinsate blank were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The sample was collected on November 30, 1995, and was analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
Initial Calibration
Initial and Continuing Calibration Verification
Blanks (Method, ICB, CCB)
Standard Spikes

- \* Duplicate Sample
- Spiked Sample Analyses (MS/MSD)
   Certified Reporting Limits (CRL)

## **Duplicate Sample**

Duplicate sample analysis was not performed with this sample lot. No qualification of data has been performed as the sample associated with this lot is a field equipment rinsate blank.

## Spiked Sample Analyses

Matrix spike/matrix spike duplicate (MS/MSD) sample analysis was not performed with this sample lot. No qualification of data has been performed as the sample associated with this lot is a field equipment rinsate blank.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was not evaluated as an MS/MSD or a standard spike and a duplicate standard spike analysis was not performed. Accuracy was acceptable, as demonstrated by the standard spike sample percent recovery value being within control limits.

## TIER I DATA QUALITY ASSESSMENT CYANIDE ANALYSES: SOIL METHOD: KY15

LOT: AVTB

Analytical data for 16 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The samples were collected on November 30, 1995 and were analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
Instrument Calibration
Blank Analyses
Matrix Spike Sample Analyses
Low Spike and High Spike Analyses

Duplicate Sample Analyses (Laboratory and Field)
 Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## **Duplicate Sample Analyses**

No laboratory duplicate analyses were performed for this lot. No action was taken on this basis.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the high spike analyses and matrix spike/matrix spike duplicate (MS/MSD) analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the low spike and high spike percent recovery (%R) values and MS/MSD %R values being within control limits.

## TIER I DATA QUALITY ASSESSMENT CYANIDE ANALYSES: WATER METHOD: TY23

LOT: AVSJ

Analytical data for one equipment blank were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1991). The sample was collected on November 30, 1995, and was analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Instrument Calibration Blank Analyses

- \* Matrix Spike Sample Analyses
- Low Spike and High Spike Analyses
- Duplicate Sample Analyses (Laboratory and Field)
   Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## **Matrix Spike Sample Analyses**

No matrix spike/matrix spike duplicate (MS/MSD) analyses were performed for this lot. No action was taken on this basis.

## Low Spike and High Spike Analyses

One low spike and two high spike analyses were performed with this sample lot. The low/high spike percent recovery (%R) values were evaluated based on the control chart upper and lower limits. The low spike %R value of 103% was greater than the upper control limit of 98.4%. As this low spike %R value was within the *National Functional Guidelines* control limits, no qualifiers were assigned. The high spike %R values of 97.3% and 98.0% were within the control limits.

## **Duplicate Sample Analyses**

No laboratory and field duplicate analyses were performed for this lot. No action was taken on this basis.

RUST E&I: Tooele North Data Assessment

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the high spike analyses being within QC criteria. Accuracy was acceptable, as demonstrated by the low spike and high spike %R values being within control limits.

## TIER I DATA QUALITY ASSESSMENT NITRATES AND NITRITES: SOIL METHOD: KT09

LOT: AVVA

Analytical data for 16 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The samples were collected on November 30, 1995, and were analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below. All criteria were met for all quality control requirements.

Technical Holding Times
Initial Calibration
Initial and Continuing Calibration Verification
Blanks (Method, ICB, CCB)
Duplicate Sample
Spiked Sample Analyses (MS/MSD))
Certified Reporting Limits (CRL)

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference values of the field duplicate and matrix spike/matrix spike duplicate (MS/MSD) analyses. Accuracy was acceptable, as demonstrated by the laboratory control sample and MS/MSD percent recovery values being within control limits.

## TIER I DATA QUALITY ASSESSMENT NITRATE PLUS NITRITE: WATER METHOD: LL8

LOT: AVSC

Analytical data for one water sample was reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The sample was collected on November 30, 1995, and was analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times Initial Calibration Initial and Continuing Calibration Verification

- Blanks (Method, ICB, CCB, Equipment)
- Laboratory Control Sample Analyses
   Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## **Laboratory Control Sample Analyses**

The percent recovery (%R) values for two high spike analyses (93.4% and 94.8%) were slightly less than control limits of 95.3% to 99.5%. As the %R value was within the laboratory control limits for a third laboratory control sample (LCS), and as these two high spike %R values were reasonable, no qualifiers were assigned on the basis of these LCS results.

## Blanks (Method, ICB, CCB, Equipment)

Equipment blank 3ER-70 contained 97.6  $\mu$ g/L of nitrites/nitrates. An action level of five times the equipment blank contamination was used to evaluate sample results. Associated samples (soil samples from Lot AVVA) with positive results reported for nitrites/nitrates contained concentrations greater than the action level and consequently were not qualified for equipment blank contamination.

#### **Overali Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the LCS analyses. Accuracy was acceptable, as demonstrated by one of the LCS %R values being within control limits.

## TIER I DATA QUALITY ASSESSMENT

SULFATE: SOIL METHOD: KT09 LOT: AWAX

Analytical data for 16 soil samples were reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The samples were collected on November 30, 1995, and were analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
Initial Calibration
Initial and Continuing Calibration Verification
Blanks (Method, ICB, CCB)
Laboratory Control Sample Analyses
Duplicate Sample

Certified Reporting Limits (CRL)

Spiked Sample Analyses (MS/MSD))

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## **Laboratory Control Sample Analyses**

The percent recovery (%R) value for the low spike analysis (84.1%) was less than control limits of 88.2% to 110.6%. The %R value for one of the high spike analyses (81.6%) was also less than control limits of 99.1% to 103.9%. The relative percent difference (RPD) value of 20.1% was also greater than the control limits of 4.2%. As the %R values were acceptable for one laboratory control sample (LCS) and the matrix spike/matrix spike duplicate (MS/MSD) analyses, no qualifiers were assigned on the basis of LCS results.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the RPD values of the MS/MSD analyses and field duplicate results. Accuracy was acceptable, as demonstrated by the MS/MSD and one of the LCS %R values being within control limits.

All data, as reported, are acceptable for use.

RUST E&I: Tooele North Data Assessment

## TIER I DATA QUALITY ASSESSMENT SULFATE: WATER METHOD: TT09

LOT: AWCR

Analytical data for one equipment blank sample was reviewed using quality control (QC) criteria documented in the analytical method, USATHAMA PAM 11-41, and *National Functional Guidelines* (U.S. EPA, 1994). The sample was collected on November 30, 1995, and was analyzed by DataChem.

#### **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Technical Holding Times
Initial Calibration
Initial and Continuing Calibration Verification
Blanks (Method, ICB, CCB, Equipment)
Laboratory Control Sample Analyses
Certified Reporting Limits (CRL)

Those items marked with an asterisk (\*) did not meet all specified QC criteria and are discussed below. QC items not marked with an asterisk meet all QC criteria.

## **Laboratory Control Sample Analyses**

The percent recovery (%R) value for one high spike analysis (104.8%) was slightly greater than the control limits of 98.4% to 103.0%. As the %R values were acceptable for two other laboratory control sample (LCS) analyses, no qualifiers were assigned on the basis of LCS results.

#### **Overall Assessment**

On the basis of this evaluation, the laboratory followed the specified method.

Precision was acceptable, as demonstrated by the relative percent difference (RPD) values of the LCS analyses. Accuracy was acceptable, as demonstrated by most of the LCS %R values being within control limits.

Environmental Science and Chemistry

## APPENDIX A DATA QUALIFIER SUMMARY TABLE

### DATA QUALIFIER SUMMARY TABLE FOR BACKGROUND AND FIELD BLANK SAMPLES

8909-10	, 			<del></del>					
Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AVZD	3ER-67	005 UC04285	WATER	SD25	SE	LT 2.53		UJ-10	UGL
AVZD	3ER-68	006 UC04286	WATER	SD25	SE	LT 2.53		UJ-10	UGL
AVZD	3ER-69	007 UC04349	WATER	SD25	SE	LT 2.53		UJ-10	UGL
AVRT	3ER-70	005 UC04459	WATER	UW27	NG	LT 1.49		UJ-5B	UGL
AVRT	3ER-70	005 UC04459	WATER	UW27	PETN	LT 2.00		UJ-5B	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	46DN2C	ND 50.0	R	UJ-5A	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	ANIL	ND 2.00	R	R-5A	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	BENZID	ND 2.00	R	R-5A, 5B	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	KEP	ND 20.0	R	UJ-5A	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	PCB016	ND 9.10	R	R-5A, 5B	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	PCB221	ND 9.10	R	R-5A, 5B	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	PCB232	ND 9.10	R	R-5A, 5B	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	PCB242	ND 9.10	R	R-5A, 5B	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	PCB248	ND 9.10	R	R-5A, 5B	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	PCB254	ND 9.10	R	R-5A, 5B	
AVSI	3ER-70	002 UC04463	WATER	UM25	PCB260	ND 13.0	R	R-5A, 5B	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	PCP	LT 9.10		UJ-5A	UGL
AVSI	3ER-70	002 UC04463	WATER	UM25	TXPHEN	ND 17.0	R	R-5A, 5B	UGL
AVZD	3FB-P	008 UC04353	WATER	SD25	SE	LT 2.53		UJ-10	UGL
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	678HPD	0.00000655	В	U-7	UGG
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	678HPF	0.0000221	В	U-7	UGG
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	78HXDF	0.00000762	В	U-7	UGG
AWKZ	BKS-95-06	039 UC04345	SOIL	8290	OCDD	0.0000301	В	U-7	UGG
AWKZ	BKS-95-07	040 UC04346	SOIL	8290	678HPF	0.0000221	В	U-7	UGG
AWKZ	BKS-95-07	040 UC04346	SOIL	8290	78HXDF	0.00000457	В	U-7	UGG
AWKZ	BKS-95-08	041 UC04347	SOIL	8290	678HPD	0.00000352	В	U-7	UGG
AWKZ	BKS-95-08	041 UC04347	SOIL	8290	678HPF	0.00000511			UGG
AWKZ	BKS-95-08	041 UC04347	SOIL	8290	OCDD	0.0000266	В		UGG
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	678HPD	0.00000320			UGG
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	678HPF	0.00000333			UGG
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	78HXDF	0.00000166			UGG
AWKZ	BKS-95-09	042 UC04348	SOIL	8290	OCDD	0.0000186			UGG

#### DATA QUALIFIER SUMMARY TABLE FOR SWMU 40

Lot         Site ID         Lab ID         Matrix         Method         Analyte         Conc.         Lab Qualifier           AVSY         ARB-95-01B         004 UC04402         SOIL         LM25         46DN2C         LT 0.800           AVSY         ARB-95-01B         004 UC04402         SOIL         LM25         ANIL         ND 0.130         R           AVSY         ARB-95-01B         004 UC04402         SOIL         LM25         BENZID         ND 0.130         R           AVSY         ARB-95-01B         004 UC04402         SOIL         LM25         KEP         ND 1.30         R	UJ-5A R-5A R-5A, 5B UJ-5A R-5A, 5B	UGG UGG
AVSY         ARB-95-01B         004 UC04402         SOIL         LM25         ANIL         ND 0.130         R           AVSY         ARB-95-01B         004 UC04402         SOIL         LM25         BENZID         ND 0.130         R	R-5A R-5A, 5B UJ-5A R-5A, 5B	UGG UGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 BENZID ND 0.130 R	R-5A, 5B UJ-5A R-5A, 5B	UGG
AVOV APP OF OR	UJ-5A R-5A, 5B	+
AVSV APP.05.01B 004 LCC04403 COII LAGE	R-5A, 5B	LICC
AVSY   ARB-95-01B   004 UC04402   SOIL   LM25   KEP   ND 1.30   R		JUGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 PCB016 LT 0.320		UGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 PCB221 ND 0.320 R	R-5A, 5B	UGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 PCB232 ND 0.320 R	R-5A, 5B	UGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 PCB242 ND 0.320 R	R-5A, 5B	UGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 PCB248 ND 0.320 R	R-5A, 5B	UGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 PCB254 ND 0.320 R	R-5A, 5B	UGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 PCB260 LT 0.790	R-5A, 5B	UGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 PCB262 LT 6.30	R-5A, 5B	<del></del>
AVSY ARB-95-01B 004 UC04402 SOIL LM25 PCP LT 0.760	UJ-5A	UGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 TXPHEN LT 12.0	R-5A, 5B	UGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 UNK562 10.0 SB	R-7	UGG
AVSY ARB-95-01B 004 UC04402 SOIL LM25 UNK642 0.700 SB	R-7	UGG
ANAIL APP OF OUR LOCALIDATION CONT. L. TOT.		UGG
AWBI ARB-95-01B 004 UC04401 SOIL PRCL CLO4 LT 5.00		UGG
AVSY ARB-95-02B 020 UC04465 SOIL LM25 46DN2C LT 0.800		UGG
AVSY ARB-95-02B 020 UC04465 SOIL LM25 ANIL ND 0.130 R	R-5A	UGG
AVSY ARB-95-02B 020 UC04465 SOIL LM25 BENZID ND 0.130 R	R-5A, 5B	
AVOV ADD OF OOD		UGG
AVSY ARB-95-02B 020 UC04465 SOIL LM25 PCB016 LT 0.320	R-5A, 5B	UGG
AVCV ADD OF OOD	R-5A, 5B	
AVOV ADD OF OOD	R-5A, 5B	
AVSY ARB-95-02B 020 UC04465 SOIL LM25 PCB242 ND 0.320 R	R-5A, 5B	UGG
AVOV APP OF COP	R-5A, 5B	
AVSY ARB-95-02B 020 UC04465 SOIL LM25 PCB254 ND 0.320 R	R-5A, 5B	UGG
AVOV APP OF OOD	R-5A, 5B	
AVOV ADD OF OOD	R-5A, 5B	
AVOV ADD OF OOD		UGG
AVOV APP OF OR	R-5A, 5B	
AVOV APP OF OOD		UGG
AVOV APP OF COR		UGG
ALGORIAN AND ALGOR		UGG
AUTH APP OF CO.		UGG
AVOV APP OF ORD		UGG
AVOV APP 05 00P 00711004447 000		UGG
AVSY ARB-95-03B 007 UC04417 SOIL LM25 BENZID ND 0.130 R	R-5A, 5B I	UGG

### DATA QUALIFIER SUMMARY TABLE FOR SWMU 40

Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	UNK563	10.0	SB	R-7	UGG
AVSY	ARB-95-03B	007 UC04417	SOIL	LM25	UNK642	0.300	SB	R-7	UGG
AWU	ARB-95-03B	010 UC04414	SOIL	LF05	NC	173		R-7,8	UGG
AWBI	ARB-95-03B	008 UC04416	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	.LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	UNK562	5.00	SB	R-7	UGG
AVSY	ARB-95-04B	009 UC04425	SOIL	LM25	UNK642	0.500	SB	R-7	UGG
AVVU	ARB-95-04B	012 UC04422	SOIL	LF05	NC	149		R-7,8	UGG
AWBI	ARB-95-04B	010 UC04424	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
AVSY	ARB-95-05B	011 UC04433	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
AVSY	ARB-95-05B	011 UC04433	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
AVSY	ARB-95-05B	011 UC04433	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
AVSY	ARB-95-05B	011 UC04433	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
AVSY	ARB-95-05B	011 UC04433	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
AVSY	ARB-95-05B	011 UC04433	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG

### DATA QUALIFIER SUMMARY TABLE FOR SWMU 40

Lot	Site ID	Lab ID	Matrix	Method	Analyte	6	Lab	DV	
AVS		011 UC04433	SOIL	LM25		Conc.	Qualifier		
AVS		011 UC04433	SOIL	LM25	PCB232 PCB242	ND 0.320		R-5A, 5B	<del></del>
AVSY		011 UC04433	SOIL	LM25	PCB242 PCB248	ND 0.320		R-5A, 5B	
AVSY		011 UC04433	SOIL	LM25	PCB248 PCB254	ND 0.320		R-5A, 5B	<del></del>
AVSY		011 UC04433	SOIL	LM25	PCB260	ND 0.320	<del> </del>	R-5A, 5B	<del></del>
AVSY		011 UC04433	SOIL	LM25	PCB262	LT 0.790	<del></del>	R-5A, 5B	
AVSY		011 UC04433	SOIL	LM25	PCP	LT 6.30		R-5A, 5B	<del> </del>
AVSY		011 UC04433	SOIL	LM25	TXPHEN	LT 0.760	<del></del>	UJ-5A	UGG
AVSY		011 UC04433	SOIL	LM25		LT 12.0		R-5A, 5B	
AVSY		011 UC04433	SOIL	LM25	UNK562 UNK642	10.0		R-7	UGG
AVVU		014 UC04430	SOIL	LF05	NC	0.500	SB	R-7	UGG
AWBI	<del></del>	012 UC04432	SOIL	PRCL	CLO4	144		R-7,8	UGG
AVRR		005 UC04396	SOIL	LW30	NQ NQ	LT 5.00		UJ-8	UGG
AVSY	<del>                                     </del>	003 UC04398	SOIL	LM25	46DN2C	0.0807		J-5A	UGG
AVSY		003 UC04398	SOIL	LM25	ANIL	LT 0.800		UJ-5A	UGG
AVSY	<del></del>	003 UC04398	SOIL	LM25	BENZID	ND 0.130		R-5A	UGG
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	KEP	ND 0.130		R-5A, 5B	<del> </del>
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	PCB016	ND 1.30			UGG
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	PCB232	ND 0.320		R-5A, 5B	
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	PCB232	ND 0.320		R-5A, 5B	
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	PCB242	ND 0.320		R-5A, 5B	
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	PCB254	ND 0.320		R-5A, 5B	
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	PCB260	ND 0.320		R-5A, 5B	
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	PCB262	LT 0.790		R-5A, 5B	
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	PCP	LT 6.30		R-5A, 5B	
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	TXPHEN	LT 0.760			UGG
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	UNK562	LT 12.0		R-5A, 5B	
AVSY	ARS-95-01	003 UC04398	SOIL	LM25	UNK642	7.00			UGG
AVVU	ARS-95-01	005 UC04395	SOIL	LF05	NC	0.600			UGG
AWBI	ARS-95-01	003 UC04397	SOIL	PRCL	CLO4	152			UGG
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	46DN2C	LT 5.00			UGG
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	ANIL	LT 0.800 ND 0.130			UGG
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	BENZID				UGG
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	KEP	ND 0.130			JGG
VSY	ARS-95-02	005 UC04406	SOIL	LM25	PCB016	ND 1.30			JGG
	ARS-95-02		SOIL		PCB221	LT 0.320		R-5A, 5B	
	ARS-95-02	<del></del>	SOIL		PCB232	ND 0.320 I		R-5A, 5B L	
	ARS-95-02	005 UC04406	SOIL		PCB232 PCB242	ND 0.320 I		R-5A, 5B L	JGG JGG

### DATA QUALIFIER SUMMARY TABLE FOR SWMU 40

Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	UNK562	6.00	SB	R-7	UGG
AVSY	ARS-95-02	005 UC04406	SOIL	LM25	UNK642	0.600	SB	R-7	UGG
AVVU	ARS-95-02	007 UC04403	SOIL	LF05	NC	144		R-7,8	UGG
AWBI	ARS-95-02	005 UC04405	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	PCB260	LT 0.790		R-5A, <b>5</b> B	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	UNK562	7.00	SB	R-7	UGG
AVSY	ARS-95-03	006 UC04413	SOIL	LM25	UNK642	0.700	SB	R-7	UGG
AVVU	ARS-95-03	009 UC04410	SOIL	LF05	NC	172		R-7,8	UGG
AWBI	ARS-95-03	007 UC04412	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG

#### DATA QUALIFIER SUMMARY TABLE FOR SWMU 40

8909-10	0								
Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	UNK562	6.00	SB	R-7	UGG
AVSY	ARS-95-04	008 UC04421	SOIL	LM25	UNK642	0.800	SB	R-7	UGG
AVVU	ARS-95-04	011 UC04418	SOIL	LF05	NC	63.9		R-7,8	UGG
AWBI	ARS-95-04	009 UC04420	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
AVRR	ARS-95-05	013 UC04427	SOIL	LW30	NQ	0.209		J-5A	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	UNK563	20.0	SB	R-7	UGG
AVSY	ARS-95-05	010 UC04429	SOIL	LM25	UNK642	0.400	SB	R-7	UGG
AVVU	ARS-95-05	013 UC04426	SOIL	LF05	NC	180		R-7,8	UGG
AWBI	ARS-95-05	011 UC04428	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
	ARS-95-06	012 UC04437	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	PCB262	LT 6.30	1	R-5A, 5B	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	PCP	LT 0.760			JGG

### DATA QUALIFIER SUMMARY TABLE FOR SWMU 40

Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	UNK562	5.00	SB	R-7	UGG
AVSY	ARS-95-06	012 UC04437	SOIL	LM25	UNK642	0.500	SB	R-7	UGG
AVVU	ARS-95-06	015 UC04434	SOIL	LF05	NC	162		R-7,8	UGG
AWBI	ARS-95-06	013 UC04436	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	UNK562	9.00	SB	R-7	UGG
AVSY	ARS-95-07	013 UC04441	SOIL	LM25	UNK642	0.800	SB	R-7	UGG
AVVU	ARS-95-07	016 UC04438	SOIL	LF05	NC	140		R-7,8	UGG
AWBI	ARS-95-07	014 UC04440	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	PCB254	ND 0.320	R	R-5A, 5B	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	UNK562	6.00	SB	R-7	UGG
AVSY	ARS-95-08	014 UC04445	SOIL	LM25	UNK642	0.400	SB	R-7	UGG

### DATA QUALIFIER SUMMARY TABLE FOR SWMU 40

8909-1	<u> </u>	<u> </u>	1	<del></del>	<u> </u>	- <del>,</del>	<del></del>		<del>_</del>
Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AVVU	1	017 UC04442	SOIL	LF05	NC	121		R-7,8	UGG
AWBI		015 UC04444	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
AVRR		018 UC04447	SOIL	LW30	NQ	0.350		J-5A	UGG
AVSY		015 UC04449	SOIL	LM25	46DN2C	LT 0.800		UJ-5A	UGG
AVSY		015 UC04449	SOIL	LM25	ANIL	ND 0.130	R	R-5A	UGG
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	BENZID	ND 0.130	R	R-5A, 5B	UGG
AVSY		015 UC04449	SOIL	LM25	KEP	ND 1.30	R	UJ-5A	UGG
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	UGG
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	PCB221	ND 0.320	R	R-5A, 5B	+
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	PCB232	ND 0.320	R	R-5A, 5B	+
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	PCB242	ND 0.320	R	R-5A, 5B	<del> </del>
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	PCB248	ND 0.320	R	R-5A, 5B	<del> </del>
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	PCB254	ND 0.320		R-5A, 5B	
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	PCP	LT 0.760		UJ-5A	UGG
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	UNK562	7.00	SB	R-7	UGG
AVSY	ARS-95-09	015 UC04449	SOIL	LM25	UNK642	0.500		R-7	UGG
AVVU	ARS-95-09	018 UC04446	SOIL	LF05	NC	97.3		R-7,8	UGG
AWBI	ARS-95-09	016 UC04448	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
AVRR	ARS-95-10	019 UC04451	SOIL	LW30	NQ	0.148		J-5A	UGG
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	46DN2C	LT 0.800			UGG
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	ANIL	ND 0.130			UGG
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	BENZID	ND 0.130		R-5A, 5B	
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	KEP	ND 1.30		UJ-5A	UGG
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	PCB016	LT 0.320		R-5A, 5B	
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	PCB221	ND 0.320		R-5A, 5B	
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	PCB232	ND 0.320		R-5A, 5B	
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	PCB242	ND 0.320	+	R-5A, 5B	
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	PCB248	ND 0.320		R-5A, 5B	
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	PCB254	ND 0.320		R-5A, 5B	
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	PCB260	LT 0.790		R-5A, 5B	
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	PCB262	LT 6.30		R-5A, 5B	
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	PCP	LT 0.760			UGG
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	TXPHEN	LT 12.0		R-5A, 5B	
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	UNK562	5.00			UGG
AVSY	ARS-95-10	016 UC04453	SOIL	LM25	UNK642	0.600			UGG
AVVU	ARS-95-10	019 UC04450	SOIL		NC	148			UGG
		L				140	r	<u>1-7,0</u>	JGG

### DATA QUALIFIER SUMMARY TABLE FOR SWMU 40

Lot	Site ID	Lab ID	Matrix	Method	Analyte	Conc.	Lab Qualifier	DV Qualifier	Units
AWBI	ARS-95-10	017 UC04452	SOIL	PRCL	CLO4	LT 5.00		UJ-8	UGG
AVRR	ARS-95-11	020 UC04455	SOIL	LW30	NQ	0.235	D	J-5A	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	46DN2C	LT 0.800	D	UJ-5A	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	ANIL	ND 0.130	RD	R-5A	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	BENZID	ND 0.130	RD	R-5A, 5B	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	KEP	ND 1.30	RD	UJ-5A	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	PCB016	LT 0.320	D	R-5A, 5B	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	PCB221	ND 0.320	RD	R-5A, 5B	UGG
AVSY	ARS-95-11	. 017 UC04457	SOIL	LM25	PCB232	ND 0.320	RD	R-5A, 5B	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	PCB242	ND 0.320	RD	R-5A, 5B	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	PCB248	ND 0.320	RD	R-5A, 5B	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	PCB254	ND 0.320	RD	R-5A, 5B	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	PCB260	LT 0.790	D	R-5A, 5B	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	PCB262	LT 6.30	D	R-5A, 5B	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	PCP	LT 0.760	D	UJ-5A	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	TXPHEN	LT 12.0	D	R-5A, 5B	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	UNK562	10.0	SBD	R-7	UGG
AVSY	ARS-95-11	017 UC04457	SOIL	LM25	UNK642	0.900	SBD	R-7	UGG
AVVU	ARS-95-11	020 UC04454	SOIL	LF05	NC	111	D	R-7,8	UGG
AWBI	ARS-95-11	018 UC04456	SOIL	PRCL	CLO4	LT 5.00	D	UJ-8	UGG

Environmental Science and Chemistry

APPENDIX B

DATA QUALIFIER REASON CODES

### DATA QUALIFIER REASON CODES

1	Holding Times
2	Sample Preservation
3	Sample Custody
4	Missing Deliverables
5A	Calibration (initial)
5B	Calibration (continuing)
6	Field Blanks
7	Laboratory Blanks
8	Matrix Spike
9	Precision (Duplicate, or Matrix Spike Duplicate)
10	Laboratory Control Sample
11	Detection Limit
12	Standards
13	Surrogates
14	Other
15	Furnace QC
16	ICP Serial Dilution
17	Chemical Recoveries
18	Trip Blanks
19	Internal Standards
20	Linear Range Exceeded
21	Potential False Positives

**Summary of** 

Qualified Data Based on

**EPA Functional Guidelines** 

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Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

## Surface Soil

ANIONS  NITRATE  2,4,6-TRINITROTOLUENE  2,6-DINITROTOLUENE  2,6-DINITROTOLUENE  2,6-DINITROTOLUENE  2,6-DINITROTOLUENE  0,831  RDX  ANTIMONY  ARSENIC  ARSENIC  BARIUM  BARIUM  CALCIUM  NA  CHROMIUM  CALCIUM  NA  CHROMIUM  COPPER  SIRON  LEAD  MAGNESIUM  MAGNESIUM  NA  MARCURY  NA  MARCURY  NA  SILVER  SODIUM  VANADIUM  NA  SILVER  SODIUM  NA  NA  NA  NA  SODIUM  NA  SILVER  SODIUM  NA  NA  SILVER  SODIUM  NA  SILVER  SODIUM  NA  NA  SILVER  SODIUM  NA  NA  SODIUM  NA  NA  NA  SODIUM  NA  NA  NA  SODIUM  NA  NA  SODIUM  NA  NA  SODIUM  NA  NA  SODIUM  NA  NA  NA  SODIUM  NA  NA  SODIUM  NA  NA  NA  SODIUM  NA  NA  NA  NA  NA  NA  NA  NA  NA  N	Analytes 0 ft	101-3	OBS-92-201	-201	OBS-92-301	2-301	OBS-92-401	2-401	OBS-9	OBS-92-G01	OBS-92-G02	-G02
NITRATE 2,4-DINITROTOLUENE 2,4-G-TRINITROTOLUENE 2,6-DINITROTOLUENE RDX ALUMINUM ANTIMONY ARSENIC BARIUM BERYLLIUM BERYLLIUM CADMIUM CALCIUM CALCIUM CHROMIUM CALCIUM CAPER IRON LEAD MAGNESIUM MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN NEWEL							מונ		0	=	0 0	
2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2,6-DINITROTOLUENE RDX ALUMINUM ANTIMONY ARSENIC BARIUM BERYLLIUM BERYLLIUM CADMIUM CALCIUM CALCIUM CALCIUM CHROMIUM CALCIUM CAPER IRON LEAD MAGNESIUM MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE BUTYLBERZYL PHTHALATE DIN NEWS			3 36	-	3. 26	:	,	:				
2,4,6-TRINITROTOLUENE 2,6-DINITROTOLUENE RDX ALUMINUM ANTIMONY ARSENIC BARIUM BERYLLIUM BORON CADMIUM CALCIUM CALCIUM CALCIUM CALCIUM CALCIUM CALCIUM CALCIUM MAGNESIUM MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2,6-DINITROTOLUENE DI-N-BUTYL PHTHALATE DI-N-BUTYL PHTHALATE		=	777	) <b>:</b>	00	<b>)</b> ;	79.7	)	11.4		3.52	
2,6-DINITROTOLUENE RDX ALUMINUM ANTIMONY ARSENIC BARIUM BERYLLIUM BORON CALCIUM COPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,6-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN MANGANE		<b>:</b>	0.744	<b>&gt;</b> :	0.744	D	0.744	⊃	0.744	=	1 73	
A.O-DIMITRO I CLUENE RDX ALUMINUM ANTIMONY ARSENIC BARIUM BERYLLIUM BORON CADMIUM CALCIUM CALCIUM COPPER IRON LEAD MAGNESIUM MAGNESIUM MAGNESIUM MAGNESIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITRO TO LUENE 2,6-DINITRO TO LUENE BUTYLBENZYL PHTHALATE DIN BUTYL PHALATE DIN MACHEL DIN BUTYL PHALATE DIN MACHEL DIN BUTYL PHALATE	2	>	0.931	Þ	0.931	Þ	0.931	=	0 031	=		:
ALUMINUM ANTIMONY ANSENIC BARSENIC BARRIUM BERYLLIUM BORON CADMIUM CALCIUM CALCIUM CHROMIUM COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE BUTYLBERZYL PHTHALATE DIN NEWEL		ם	0.83	<b>-</b>	0.83	Ξ	0 02	) <b>=</b>	10.50	> :	0.931	>
ALUMINUM ANTIMONY ARSENIC BARIUM BERYLLIUM BORON CADMIUM CALCIUM CHROMIUM COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2.4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	0 445	=	0.445	:		<b>:</b>	6.0	>	0.83	<b>D</b>	0.83	<b>&gt;</b>
ANTIMONY ARSENIC BARIUM BERYLLIUM BORON CADMIUM CALCIUM COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN NEWEL	C	>	C++.0	<b>-</b>	0.445	<b>&gt;</b>	0.445	כ	0.445	-	yr 8	
AND IMPORT AND IMPORT AND AND IMPORT BARBENIC BARRIUM BORON CADMIUM CALCIUM CALCIUM CALCIUM CALCIUM CALCIUM CARCIUM COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN NEWS	AN		Ϋ́Ζ		×z		Z		VIV	)	2:5	
ARSENIC BARIUM BERYLLIUM BORON CADMIUM CALCIUM CALCIUM COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM VANADIUM ZINC 2.4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	34	Þ	34	-	77			;	۲ <u>.</u>		ζZ	
BARIUM BERYLLIUM BORON CADMIUM CALCIUM CHROMIUM COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN NEUTYL PHTHALATE	240	=	7	) =	,	<b>:</b>	<b>a</b>	>	34	Þ	34	Þ
BERYLLIUM BORON CADMIUM CALCIUM CHROMIUM COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN NEWEL	220	)	<b>.</b> .	<b>&gt;</b>	48	)	240	<b>&gt;</b>	240	<b>-</b>	24	1
BORON CADMIUM CALCIUM CALCIUM CHROMIUM COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN NEWFOLD	150		380		120		160		180	•	5	)
BORON CADMIUM CALCIUM CHROMIUM COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	0.078	<b>-</b>	0.078	Þ	0.078	1	0.00	-	201	:	201	
CADMIUM CALCIUM CHROMIUM COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN NEUTYL PHTHALATE	Ϋ́Ζ		Ž		474	)	9.5.5	>	0.078	<b>-</b>	0.078	⊃
CALCIUM CHROMIUM COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE DI-N-BUTYL PHTHALATE DI-N-BUTYL PHTHALATE	VCV 0	=			<b>Y</b>		<u>ح</u>		¥z		Ϋ́	
CHROMIUM CORALT COPPER IRON LEAD MAGNESE MANGANESE MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM VANADIUM LEAD 2.4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN BUTYL PHTHALATE DIN BUTYL PHTHALATE	+7+.0	<b>&gt;</b>	2		0.424	Þ	0.424	Þ	0 424	-	7070	=
CHRUMIUM COBALT COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN NUTROLOGO	Y.		۲×		Ϋ́		Z	,	AIA.	)	7.75	>
COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN NUTCOLUENE	12.9		186		16.7		5 5		YZ.		۷ ۷	
COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	Y N		7.07		10.		12.3		17.1		10.5	
IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN WATTOLOGO	¥2.		۲ ۲		۲X		٧X		YZ		V	
LEAD MAGNESIUM MAGNESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN WATTOOLOENE	33		200		13.9		7.0		į (		<u> </u>	
LEAD MAGNESIUM MANGANESE MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE DI-N-BUTYL PHTHALATE DI-N-BUTYL PHTHALATE	15000		39000		15000	٠	2		33		3	
MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN WATTOLOGO	46		1300				3		20000		12000	
MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DIN WATTOLOGO	N.A.		7.5		9		77		20		35	
MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-NEUTYL PHTHALATE	Y-1		Z Z		Y N		٧X		Ϋ́		N N	
MEKCUKY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	YZ		۲		Ϋ́		Z		<b>V</b>		<u> </u>	
NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC Z.4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	0.25		0.0259	=	0 00 0	11	100		VVI C		Z	
POTASSIUM SILVER SODIUM VANADIUM ZINC 2.4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	2.46	11	8 83	<b>)</b>	0.0633	<b>:</b>	0.0279	;	0.0486		0.0259	n
SILVER SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	N N	)	70.0		2.40	>	2.46	n	2.46	ב	2.46	Ω
SODIUM VANADIUM ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	2300		ξ.		Š		× z		ž		Y.	,
SOCIOM VANADIUM ZINC 2,4-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	0.0833		1.2		0.0612		0.0773		0 187		25.	
VANADIUM ZINC ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	Y.		٧Z		Ϋ́		AZ		N.		<u> </u>	
ZINC 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	¥Z		Z		Ž				V.		٧	
2,4-DINITROTOLUENE 2,6-DINITROTOLUENE BUTYLBENZYL PHTHALATE DI-N-BUTYL PHTHALATE	130		000		ξ :		NA.		Y V		ΥN	
ALATE TE	95.0	:		:	43		<u>8</u>		200		280	
NLATE TE	6.59	<b>&gt;</b> ;		<b>-</b>	0.39	n	0.75		0.39	=	2	
	0.53	<b>-</b>		<b>&gt;</b>	0.53	n	0.53	=	0.53	) <b>:</b>	2 6	
	. 0.33	5		5	0.283		000	· =		٠ -	0.70	:
	0.33	n		Ξ	0 33	111	3	>	0.10	- ;	0.33	5
IN-INTROSO DIPHENYLAMINE	0.33	m	0 33	3 =	0.33	3 5	0.21		0.33	5	0.33	n
			1	3	3	3	10.00		0.33	5	0.33	n

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Surface Soil (continued)

Group	Analytes	OBS-92-G03 0 ft	G03	OBS-92-G04 0 ft	7-G04	OBS-92-G05	2-G05 R	OBP-94-01A	4-01A	OBP-94-02A	4-02A	OBP-94-03A	.03A
ANIONS	NITRATE	3.17		4.5		2.76		X		Y X		N	
EXPLOSIVES	2,4-DINITROTOLUENE	34		3.64		0.744	n	2.5	n	2.5	Ξ	25	=
	2,4,6-TRINITROTOLUENE	0.931	Ω	3.4		0.931	Ω	7	'n	7	=	<u>,</u>	=
	2,6-DINITROTOLUENE	0.83	n	0.83	n	0.83	Ω	2	Ω	7	=		=
	RDX	0.445	Þ	0.445	n	0.445	Ω	1.28	Ω	1.28	· =	1 28	· =
METALS	ALUMINUM	٧×		Ϋ́		Ϋ́Z		17300		12300	)	6730	)
	ANTIMONY	34	n	34	Ω	11		19.6	=	10 6	Ξ	10.00	-
	ARSENIC	24	n	240	n	120	o D	7.17	)	2,68	3	17.0	3
	BARIUM	240		230		160		344		£ &		1 77	
	BERYLLIUM	0.078	n	0.078	Ω	0.078	n	0.726		0.549		0.477	=
	BORON	ΥN		X		¥		X		X		2	)
	CADMIUM	0.424	Ω	0.424	Ω	0.424	n	1.2	Ω	1.2	=	12	Ξ
	CALCIUM	۲X		Ϋ́		Ϋ́		11800		2220	)	4460	)
	CHROMIUM	11.8		13.6		12.4		39.3		14.8		9 41	
	COBALT	۲X		X X		×		9		3.22		2.5	=
	COPPER	35		62		14.8		112		11.6		10.5	)
	IRON	10000		13000		16000		36500		11500		7190	
	LEAD	35		43		20		1800		109		32.2	
	MAGNESIUM	ž		Ϋ́		۲×		0969		3200		1560	
	MANGANESE	YZ.		Y Z		Ϋ́		488		208		21.2	D
	MERCURY	0.0259	Þ	0.0277		0.0259	n	0.02	n	0.05	Ω	0.02	
	NICKEL	2.46	Þ	2.46	n	2.46	D	23.3		7.83		3.86	1
	POTASSIUM	Y Z		Ϋ́Z		٧X		4820		3230		1720	
	SILVER	0.112		0.128		0.0818		0.803	D	0.803	Ω	0.803	ם
	SODIUM	Ϋ́		Ϋ́		٧X		278		174		151	)
	VANADIUM	Ϋ́		۲		N A		27.8	-	17.7		3.15	=
	ZINC	240		240		11		641		43		45.0	)
SEMIVOLATILES	2,4-DINITROTOLUENE	7		4.5		0.39	Ω	Y		ž		Y X	
		0.58		0.53	n	0.53	Ω	Ϋ́		X		ź	
	BUIYLBENZYL PHTHALATE	0.29	;	0.19		0.31		Ϋ́		Ϋ́		NA	
	Market PHIHALATE	0.33	5	0.33	3	0.33	S	Ϋ́		Ϋ́		Y.	
	N-NII KOSO DIPHENYLAMINE	0.33	5	0.33	5	0.33	Ω	٧z		٧Z		Z	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Surface Soil (continued)

Group	Anslytes	OBP-94-04A	t-04A	OBP-94-06A	4-06A	OBP-9	OBP-94-07A	OBP-94-08A	4-08A	OBP-94-09A	4-09A	OBP-94	-09A
	Continue de la contin	6.0	=	11 6.0	=	0.5 R	_	0.5 ft	=	0.5 ก	2	0.5 ft (dup)	(dnf
ANIONS	NITRATE	X		X		Ž		47		;			
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	n	2.5	=	2 5	=	ξ <b>ν</b>	=	Ž,	:	YZ,	;
	2,4,6-TRINITROTOLUENE	2	n	7	=	<u>,</u>	=		> =	C.,	<b>&gt;</b> :	2.5	<b>&gt;</b> :
	2,6-DINITROTOLUENE	,	=	·	=	1 (	) <b>:</b>	4 (	<b>&gt;</b> ;	7	>	7	)
	RDX	, 60	> :	7 .	<b>&gt;</b> :	7	<b>&gt;</b>	7	Þ	7	Þ	7	Þ
METAIS	AT THEIRITIA	07.1	>	1.28	)	1.28	ם	1.28	ם	1.28	n	1.28	=
	ANTERINOIM	14600		11500		16700		18400		18700		12100	)
	ANIMONY	19.6	5	19.6	D	19.6	=	10 6		10.4	=	3177	:
	ARSENIC	3.93		3.6		15 9	)	2 53	•	17.0	>	19.0	>
	BARIUM	205		Ξ		36.		5.1		7.5		2.08	
	BERYLLIUM	0.575		0.50		500		7.7		138		131	
	RORON			675.0		0.009		0.74		0.735		0.848	
	CADMITIM	<u> </u>	:	ď.	,	Y V		۲X		٧Z		Ϋ́Z	
		7.7	>	1.2	D	1.59		1.2	n	1.2	=	1.2	=
	CALCIOM	4450		3650		30500		7070		12000	)	25.5	)
	CHROMIUM	34.4		13.2		30.5		20.6		5		3 5	
	COBALT	6.62		3 46		4 40		200		02.		17.9	
	COPPER	116		2.1		7.47		4.00		5.99		5.98	
	IRON	21600		2000		347		81.9		16.8		16.7	
	LEAD	2017		0007		26100		16400		16500		13100	
	MAGNEGITIM	÷ 6		20.8		982		55.9		9.36		7.44	D
	MANICALINE	900		4340		5440		5860		6580		5500	)
	MANGANESE	290		320		338		380		368		345	
	MERCURI	0.05	Þ	0.02	ם	0.102	-	0.02	Ω	0.05	Ω	0.05	Ξ
	DOTA COLLINA	10.1		8.57		15.2		8.94		9.78		86.8	)
	FULNSSIUM	4180		3470		4990		5610		5750		3620	
	SILVER	0.803	Þ	0.803	n	0.803	n	0.803	Ω	0.803	Π	0.803	1
	SOLDIUM	268		119		277		236		237	<b>&gt;</b>	222	•
	VANADIUM	21.9		3.56	5	26.6	ſ	26.4	_	27.3	-	17.7	
SELLING LATER TO	ZINC	137		50.1		952		171		2.5		75.0	
SEMINOLATILES	2,4-DINITROTOLUENE	۷ ۷		Ϋ́Z		٧		Z		· V		7.0	
	2,6-DINITROTOLUENE	ΥN		Ϋ́		Z		ź				<b>Y</b> :	
	BUTYLBENZYL PHTHALATE	٧Z		Y X		Ž		2 2		V :		Š	
	DI-N-BUTYL PHTHALATE	YZ		Z		<u> </u>		ξ;		Y :		۲ ۲	
	N-NITROSO DIPHENYI AMINE	Ž		2 2		ζ:		Ž.		Y X		۲ ۲	
	יייייייייייייייייייייייייייייייייייייי	V		۲		Ž		Z					

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Surface Soil (continued)

		OBP-94-10A	4-10A	OBP-94-12A	1-12A	OBS-94-01	4-01	OBS-94-02	94-02	OBS-94-03	94-03	OBS-94-04	8
Group	Analytes	0.5 ก	2	0.5 ก	=	0.5 ft	2	0.5 ft	2	0.5 ก	=	0.5 ก	;
ANIONS	NITRATE	Ϋ́		٧×		٧×		٧X		×		Z	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	ם	2.5	n	2.5	n	2.5	Ω	2.5	ב
	2,4,6-TRINITROTOLUENE	7	n	7	n	7	n	7	ם	7	n	2	n
	2,6-DINITROTOLUENE	7	n	7	ລ	7	n	2	n	7	D	7	ב
	RDX	1.28	n	1.28	n	1.28	n	1.28	n	1.28	Ω	1.28	ח
METALS	ALUMINUM	9260		12600		16500		16100		14200		15300	
	ANTIMONY	19.6	n	19.6	n	19.6	ם	19.6	n	19.6	Ω	19.6	Þ
	ARSENIC	34		4.55		4.81		S		4.77		3.61	)
	BARIUM	167		113		142		152		126		120	
	BERYLLIUM	0.427	n	0.647		0.767		0.725		0.674		0.643	
	BORON	٧X		¥Z		Ϋ́		۲×		Ϋ́		٧X	
	CADMIUM	1.38		1.2	n	1.2	n	1.2	n	1.2	n	1.2	ב
	CALCIUM	4010		8210		4150		7330		5110		3720	,
	CHROMIUM	26.1		14		17.4		16.5		15		17.5	
	COBALT	6.64		4.72		5.32		5.32		4.88		3.83	
	COPPER	38.7		11.1		17.5		18.6		13.6		14.4	
	IRON	76800		12900		15500		14600		13700		12500	
	LEAD	89.4		7.44	n	12.3		17.1		Ξ		14.8	
	MAGNESIUM	3750		0009		7080		7840		6910		5770	
	MANGANESE	482		330		419		410		351		333	
	MERCURY	0.02	ם	0.02	n	0.02	D	0.02	n	0.02	D	0.05	ם
	NICKEL	15.2		9.71		11.9		11.4		10.6		9. 8	
	POTASSIUM	3100		3650		4670		4620		3940		4330	
	SILVER	0.803	ם	0.803	Þ	0.803	D	0.803	D	0.803	n	0.803	ר
	SODIUM	332		239		318		328		247		318	
	VANADIUM	14.7		17.4		21.9		20.5		19		20.9	
	ZINC	355		41.1		55.8		53.9		46		43.1	
SEMIVOLATILES	2,4-DINITROTOLUENE	NA		Ϋ́		٧X		۲Z		Ϋ́		N A	
	2,6-DINITROTOLUENE	Ϋ́Z		¥		Ν		۲ ۲		Ϋ́		٧ ٧	
	BUTYLBENZYL PHTHALATE	×z		¥		Ϋ́		Ϋ́		Ϋ́		×	
	DI-N-BUTYL PHTHALATE	Y Z		۲		YZ		<b>Y</b> Z		٧X		<b>\</b> Z	
	N-NITROSO DIPHENYLAMINE	NA		¥		Ϋ́N		VΥ		٧Z		٧X	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

	,	OBS-94-05	Z.	OBS-94-06	99	OBS-94-07	94-07	OBS-	OBS-94-08	OBS	OBS-94-09	OBS-9	4-09
Group	Analytes	0.5 R		0.5 ก		0.5 R	=	0.5 ก	2	0.	0.5 ft	0.5 ft (dup)	(dnb)
ANIONS	NITRATE	ΥN		٧×		Ϋ́		٧×		Ž		ž	
EXPLOSIVES	2,4-DINITROTOLUENE			2.5	Ω	2.5	ח	2.5	n	2.5	1	2.5	1
	2,4,6-TRINITROTOLUENE	2	Ω	7	n	7	n	7	D	7	) )	7	; <b>&gt;</b>
	2,6-DINITROTOLUENE			7	ם	7	n	2	n	7	D	7	ם ח
	RDX			1.28	n	1.28	ם	1.28	ם	1.28	n	1.28	כ
METALS	ALUMINUM	18100	_	1800		12600		11900		11300		8280	
	ANTIMONY	19.6		9.6	n	19.6	n	19.6	n	19.6	Ω	19.6	n
	ARSENIC	5.13	٠,	5.41		5.14		4.17		3.5		4.01	1
	BARIUM	162		<u>8</u>		113		107		96.3		86.2	
	BERYLLIUM	0.794	0	.548		0.519		0.495		0.427	n	0.427	n
	BORON			14		Ϋ́		٧z		٧V		٧z	
	CADMIUM		D	1.2	n	1.2	n	1.2	n	1.2	D	1.2	
	CALCIUM	4450	'n	2000		3060		3060		2660		2520	
	CHROMIUM	17.4		13.9		12.3		12.5		14.1		9.15	
	COBALT	5.27	ν,	3.08		4.17		4.49		4.05		2.9	
	COPPER	18.1	_	15.5		15		20.2		24.1		18.2	
	IRON	16100	-	1200		11700		11100		9390		8800	
	LEAD	19.4		14.7		16.7		22.3		31.4		23.2	
	MAGNESIUM	7820	5	9100		4510		4430		3590		3240	
	MANGANESE			265		330		306		262		251	
	MERCURY		ם	.05	n	0.05	ם	0.05	כ	0.02	n	0.02	D
	NICKEL	11.3	5	7.73		8.63		7.42		6.71		6.18	
	POLASSIUM			009		3320		3290		3180		2370	
	SILVER	0.803 U	_	.803	D	0.803	ב	0.803	ם	0.803	D	0.803	ב
	SODIUM	376		247		264		250		256		178	
	VANADIUM	23.1	I	6.5		16.6		15.5		15.4		2.21	ח
	ZINC	55.6	e	8.3		41.2		47.5		51.5		43.2	
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́		Y X		Ν		Ϋ́N		ΥN		YZ.	
	2,6-DINITROTOLUENE	Y Z		Ϋ́		٧X		Ϋ́Z		Ν		۲×	
	BUTYLBENZYL PHTHALATE	٧X		Ϋ́		Ϋ́		٧X		YZ		Z	
	DI-N-BUTYL PHTHALATE	Ϋ́		Ϋ́		٧X		۲		Ϋ́Ζ		Z	
	N-NITROSO DIPHENYLAMINE	ž		Ϋ́		Ž		ΔN		MIA			

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

		OBS-94-10	4-10	OBS-94-11	4-11	OBS-	94-12	OBS-	94-13	OBS-5	4-14	OBS-94	-15
Group	Analytes	0.5 ก	ے	0.5	2	0.5	0.5 ft	0.5 ft	2	0.5 ณ	2	0.5 ณ	
ANIONS	NITRATE	Ϋ́		٧X		Ν		Ϋ́Z		٧×		٧×	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	n	2.5	n	2.5	n	2.5	ח	2.5	n	2.5	n
	2,4,6-TRINITROTOLUENE	7	D	7	n	7	n	2	n	7	Ω	7	n
	2,6-DINITROTOLUENE	7	n	7	Ω	7	n	7	n	2	n	7	n
	RDX	1.28	Þ	1.28	ח	1.28	Þ	1.28	n	1.28	Ω	1.28	ח
METALS	ALUMINUM	9380		14800		14800		11.2	ח	10200		7970	
	ANTIMONY	19.6	ח	19.6	n	19.6	ב	19.6	n	19.6	ב	19.6	D
	ARSENIC	3.55		4.77		5.28		17.6		4.66		10.2	
	BARIUM	87.1		137		134		3.29	n	83.2		87.8	
	BERYLLIUM	0.427	D	0.655		909.0		0.427	n	0.479		0.427	n
	BORON	ž		Ϋ́Z		٧z		٧X		٧z		٧N	
	CADMIUM	1.2	D	1.2	ם	1.2	n	1.2	n	1.2	n	1.2	ח
	CALCIUM	2360		3060		3600		25.3	Ω	2250		5350	
	CHROMIUM	11.1		13.8		14.8		1.04	Ω	9.37		9.42	
	COBALT	3.86		4.97		4.4		2.5	n	3.83		2.73	
	COPPER	9.61		16.8		20.6		2.84	n	20.3		16.4	
	IRON	9850		14200		13600		99.9	n	11000		8270	
	LEAD	8.36		12.2		23.2		7.44	n	21.3		270	
	MAGNESIUM	3370		5290		5110		10.1	n	3510		3310	
	MANGANESE	278		351		365		9.87	ח	242		506	
	MERCURY	0.05	ם	0.02	n	0.05	n	0.304	_	0.02	Ω	0.02	ב
	NICKEL	6.39		10.4		9.34		2.74	D	8.39		5.34	
	POTASSIUM	2510		4010		3970		131	Þ	2670		2250	
	SILVER	0.803	n	0.803	n	0.803	n	0.803	n	0.803	n	0.803	ם
	SODIUM	191		251		347		38.7	n	110		156	
	VANADIUM	13.5		18.6		20.5		1.41	Ω	13.5		2.21	n
	ZINC	29.1		221		59.7		10000	GT	44.3		75.6	
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́		۲×		٧N		۲×		YZ.		٧X	
	2,6-DINITROTOLUENE	Ϋ́		Ϋ́Z		NA		NA		NA		٧X	
	BUTYLBENZYL PHTHALATE	VV		Ϋ́Z		Ν		۲ ۲		Y Y		×z	
	DI-N-BUTYL PHTHALATE	<b>₹</b> Z		٧X		٧Z		٧X		۲ ۲		٧Z	
	N-NITROSO DIPHENYLAMINE	٧×		٧		٧X		NA		ž		٧V	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

į		OBS-94-16	4-16	OBS-94-17	4-17	OBS-94-18	4-18	OBS-	<b>DBS-94-19</b>	OBS	94-19	ORS-0	-20
Group	Analytes	0.5 ก	ے	0.5 ft	=	0.5 ก	u u	0.5 ก	z	0.5 ก	0.5 ft (dup)	0.5 ก	
ANIONS	NITRATE	X		N N		Ą		2		ž		;	
EXPLOSIVES	2.4-DINITROTOLUENE	2.5	=	2.5	11	1 0	=	4	:	<u> </u>	;	Y,	;
	2 4 6-TRINITROTOI HENE	; (	) <b>:</b>	.; ,	> :	ć.,	>:	C.7	<b>)</b>	7.5	<b>-</b>	2.5	)
		7	<b>)</b>	7	<b>-</b>	7	<b>-</b>	7	D	7	Þ	7	n
	2,6-DINII KOI OLUENE	7	<b>-</b>	7	Þ	7	n	7	n	7	D	2	=
	KDX	1.28	Þ	1.28	n	1.28	n	1.28	D	1.28	=	1 28	=
METALS	ALUMINUM	12100		10500		25000		11600	ı	10500	)	200	
	ANTIMONY	19.6	=	19.6	=	19 6	=	10.6	=	300	=	13900	:
	ARSENIC	3.17	<b>,</b>	5.03	)	0.00	>	13.0	>	19.0	>	19.6	)
	BADIIIM			3		3.5		3.32		5.33		4.34	
		93.8	;	86.2		247		166		152		119	
	BER TLLIUM	0.427	D	0.427	Þ	1.09		0.513		0.479		0.642	
	BORON	Ϋ́		21.7		Ϋ́Z		٧Z		X		Y	
	CADMIUM	1.2	D	1.2	₽	~		\$ 00		80 9			=
	CALCIUM	2660		8090	1	16100		10301		0.70		7330	)
	CHROMIUM	127		777		333		36.		0000		3230	
	TODALT			0.4.		7.67		14.1		12.8		16.1	
	COBACI	3.4		4.23		7.75		3.61		4.33		5.09	
	COPPER	12.5		23		6.9		27.5		29.2		11.6	
	IRON	10400		10000		22500		16200		13200		13600	
	LEAD	11.7		901		68.2		35.5		35.6		7 44	=
	MAGNESIUM	3950		3130		9870		5750		5050		4970	)
	MANGANESE	270		214		555		345		137		331	
	MERCURY	0.02	n	0.02	Ω	0.05	Ω	0.187	_	0.238		0.05	11
	NICKEL	6.42		9.14		17		9.94		99.6	•	10.3	)
	POTASSIUM	3530		2420		7260		3260		3030		4490	
	SILVER	0.803	Ω	0.803	Ω	0.803	n	0.803	=	0.803	=	0 803	=
	SODIUM	211		210		314	1	279	)	234	>	750	>
	VANADIUM	15.5		19.5		30.3		15.8		14.1		702	
	ZINC	35.9		123		173		144		117		÷	
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́		Ϋ́Ζ		₹Z		X		Ž		ž	
	2,6-DINITROTOLUENE	Ϋ́		Y'N		Ϋ́Z		X		Ž		Z	
	<b>BUTYLBENZYL PHTHALATE</b>	Ϋ́		٧V		Ž		Ϋ́		2		2 2	
	DI-N-BUTYL PHTHALATE	Ϋ́Z		Ϋ́Z		Z		2		. Z		2 2	
	N-NITROSO DIPHENYLAMINE	X		V V		Ž		× 7				2 :	
								V		V.		NA	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Surface Soil (continued)

		OBS-94	1-21	OBS-94-22	34-22	OBS-6	4-23	OBS-	94-24	OBS-	74-25	OBS-94	1-26
Group	Analytes	0.5 น	_	0.5 ft	2	0.5 ก	2	0.5 ก	2	0.5 ก	=	0.5 น	
ANIONS	NITRATE	Ϋ́N		٧		Ϋ́		٧×		Ϋ́Z		×	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	n	2.5	Ω	2.5	n	2.5	n	2.5	Ω	2.5	)
	2,4,6-TRINITROTOLUENE	7	n	7	Ω	7	n	7	n	7	n	7	D
	2,6-DINITROTOLUENE	7	Ω	7	n	7	Ω	7	Ω	2	n	7	ח
	RDX	1.28	n	1.28	n	1.28	D	1.28	n	1.28	n	1.28	D
METALS	ALUMINUM	9770		7710		7430		15600		15100		13200	
	ANTIMONY	19.6	n	19.6	n	19.6	n	19.6	n	19.6	n	19.6	ב
	ARSENIC	4.11		4.36		3.9		6.78		6.9		6.23	
	BARIUM	121		106		796		160		141		137	
	BERYLLIUM	0.427	n	0,427	n	0.427	D	0.775		0.691		0.576	
	BORON	٧X		Y.	•	Ϋ́Z		∢ Z		Ϋ́Z		٧X	
	CADMIUM	1.2	D	1.2	n	1.2	ם	1.2	n	1.2	n	3.52	
	CALCIUM	5590		11800		2600		3630		3340		21600	
	CHROMIUM	11.6		8.99		9.8		14.9		14.4		14	
	COBALT	3.39		2.77		2.5	n	5.8		5.62		4.16	
	COPPER	22.7		1.91		139		18.1		25.9		23.4	
	IRON	10000		8730		8290		16000		14900		12300	
	LEAD	18.6		13.4		44.1		14		26.5		36.4	
٠	MAGNESIUM	3600		3000		2920		6250		2090		5130	
	MANGANESE	271		212		228		422		413		310	
	MERCURY	0.05	n	0.02	n	0.02	n	0.05	Ω	0.05	Ω	0.02	ח
	NICKEL	7.27		7.28		5.81		11.4		10.8		80.6	
	POTASSIUM	2600		2130		2450		4820		4240		3830	
	SILVER	0.803	n	0.803	ם	0.803	n	0.803	n	0.803	n	0.803	n
	SODIUM	170		191		148		241		219		207	
	VANADIUM	12.9		11.6		2.21	n	17.8		17.6		18.1	
	ZINC	286		91.8		597		97.6		97.9		61.2	
SEMIVOLATILES	2,4-DINITROTOLUENE	٧ ٧		٧X		Ϋ́Z		۲Z		٧z		ž	
	2,6-DINITROTOLUENE	۷X		Ϋ́Z		Y N		۲Z		٧X		Ϋ́	
	BUTYLBENZYL PHTHALATE	ΥN		Ϋ́Z		NA		ž		NA		Ϋ́N	
	DI-N-BUTYL PHTHALATE	Y Y		٧X		Y V		٧Z		NA NA		٧X	
	TIMES A STATE OF COURTS IN	AIA		:									

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Surface Soil (continued)

2	•	OBS-94-27	94-27	OBS	OBS-94-28	OBS-94-29	94-29	OBS	OBS-94-30	OBS	-94-31	ORG.0	1.33
Group	Analytes	0.5	2	0.5 ก	2	0.5 ft	=	0.5 ft	5 ft	0.	0.5 ft	0.5 ft	76.4
ANIONS	NITRATE	Ϋ́		٧X		X		Ž		V.V.		1	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	n	2.5	Ω	2.5	D	2.5	=	2 5	-	ξ×,	=
	2,4,6-1 KINIT KOTOLUENE	7	n	7	Ω	7	n	7	ם י	7	> <b>=</b>		=
	Z,0-DIMI KOLOLOENE Bry	. 2	<b>)</b>	7	n	7	Ω	7	Ω	7	) D		=
METAIR	KUA	1.28	D	1.28	ב	1.28	n	1.28	1	1.28	=	1 28	=
MEINES	ALUMINUM	11200		17700		16100		12000		14100	)	00081	>
	ANITMONY	19.6	n	19.6	n	19.6	UR	19.6	118	10.6	110	10.00	=
	AKSENIC	5.54		6.49		3.11		4.39	;	2 86		3 97	20
	BARIUM	132		154		142		28		170		10.0	
	BERYLLIUM	0.515		0.819		0.427	n	0.427	=	0.427	Ξ	167	=
	BORON	ΥN		Ϋ́Z		YZ		A Z	)	7 X	)	77.7	>
	CADMIUM	1.2	Ω	1.2	n	1.2	=	1 2	-	<u> </u>	=	Š.	:
	CALCIUM	6740		4120	1	4580	>	3170	>	2.1	)	1.2	)
	CHROMIUM	12.1		17.2		22.8		13.3		16.6		350	
	COBALT	4.95		6.24		5 61		C.C. 1		13.3		18.0	
	COPPER	40.8		20.7		16.4		15.0		7.0		6.4	
	IRON	13000		17100		16500		22.5		1.26		70.6	
	LEAD	71		16.6		300		12/00		14300		17700	
	MAGNESHIM	17		10.3		33.8		17.6		33.2		23.2	
	MANGANECE	4000		0/89		4940		3470		4290		7860	
	MERCHEY	334	;	448	;	471		312		394		505	
	NOKE	0.03	>	0.0s	>	0.05	n	0.02	Þ	0.05	<b>D</b>	0.05	n
	POTACHIM	9.30		12		9.41		7.28		8.4		10.7	
	CII VED	3470	:	2080		4300		2800		3500		5050	
	SODITIM	0.803	>	0.803	D	0.803	n	0.803	Ω	0.803	n	0.803	
	MANAPATINA	/07		265		461		427		497		654	)
	VANADIUM	15.1		21.3		22.2		16.4		19.2		727	
	ZIINC	102		26.7		61.7		48.2		170		70.5	
SEMINOLATICES	2,4-DINITROTOLUENE	Ϋ́		٧z		۲X		X		\ X		7.0.7 V.V.	
	2,6-DINITROTOLUENE	Ϋ́Z		٧Z		٧X		X		Z		ζ <u>γ</u>	
	BUITLBENZYL PHIHALATE	Y Z		۲ Z		٧X		٧X		ź		Ž	
	MANTER OF THE PRICE AND A MITTER OF THE PRICE AND A MITTER OF THE PRICE AND ADDRESS AND AD	Y :	,	YZ		Ϋ́		Ν		ž		Y Z	
	N-NI I KOSO DIPHENYLAMINE	۷V		٧×		Ϋ́Z		Y.		Ž			
										4367		17.7	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

		OBS-95-29	5-29	OBS-9	5-30	OBS-	95-31	OBS-	95-32	OBS	95-33	OBS-9	-34
Group	Analytes	0.5 R	2	0.5 น	2	0.5 ก	2	0.5	0.5 แ	0.	0.5 น	0.5 ก	
ANIONS	NITRATE	Ϋ́		٧X		N A		Z		ž		Z	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	n	2.5	Ω	2.5	n	2.5	n	2.5	n	2.5	Ω
	2,4,6-TRINITROTOLUENE	7	n	7	D	7	n	7	n	7	n	7	n
	2,6-DINITROTOLUENE	7	ם	7	n	7	n	7	n	7	Ω	7	n
	RDX	1.28	Þ	1.28	n	1.28	n	1.28	D	1.28	n	1.28	ם
METALS	ALUMINUM	10200		13800		11600		7440		17800		13800	1
	ANTIMONY	1.3		-	n	-	Þ	_	Ω	-	n	_	=
	ARSENIC	98.9	-	4.58	<b>-</b> -,	4.98	-	4.54	_	8.75	•	7.22	) <del></del>
	BARIUM	138		148		134		194		576	)	1961	•
	BERYLLIUM	0.494		0.658		0.585		0.427	Ω	0.943		0.76	
	BORON	٧X		٧z		Ϋ́		٧z		٧Z		YZ.	
	CADMIUM	1.2	Þ	1.2	n	1.2	n	1.2	Ω	1.39		1.2	=
	CALCIUM	2940		3080		3070		2660		8800		2800	)
	CHROMIUM	12.9	_	19.7	ſ	13.2	-	8.89	_	19.5	•	15.1	-
	COBALT	3.94		5.77		5.52		3.01		7.42		9	•
	COPPER	78.4		22.7		16.1		24.9		56.6		20.6	
	IRON	11100		18100		14200		11200		20200		16500	
	LEAD	78.5		27		15.5		25.1		60.4		22.7	
	MAGNESIUM	3340		4590		4290		3080		9750		8620	
	MANGANESE	340		402		379		309		673		648	
	MERCURY	0.02	3	0.05	n	0.02	3	0.05	n	0.05	n	0.02	n
	NICKEL	7.27		10.6		10.2		7.04		13.6		11	
	PUTASSIUM	2810		3550		3250		2220		0009		4990	
	SILVER	0.803	n	0.803	Ω	0.803	n	0.803	ם	0.803	D	0.803	ם
	SODIUM	137		162		130		99.3		232		241	
	VANADIUM	15.7		20.7		16.8		11.6		23.8		18.3	
	ZINC	69.4		67.3		65.8		153		408		90.8	
SEMIVOLATILES	2,4-DINITROTOLUENE	٧X		٧z		Ϋ́		AN		X		X	
	2,6-DINITROTOLUENE	٧×		Ϋ́		ΥN		٧×		×		Ž	
	BUTYLBENZYL PHTHALATE	Ϋ́		٧z		Š		ΝA		Y <sub>N</sub>		X	
	DI-N-BUTYL PHTHALATE	٧ Z		٧z		٧X		٧Z		Ϋ́N		Ϋ́	
	N-NITROSO DIPHENYLAMINE	Ϋ́N		ΝA		NA		YN .		Ϋ́		×	
													п

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

ANIONS EXPLOSIVES METALS	Analytes							-CY-000		
ANIONS EXPLOSIVES METALS		0.5 It (dup	dnp	0.5 ก	2	0.5 ณ	2	0.5 ผ	ı,	
EXPLOSIVES METALS	NITRATE	Ž		2		;				
METALS	2 4-DINITROTOI HENE	5 4	:	۲ :		۷ ۲		ΥN		
METALS	2.4. Distriction of the contract of the contra	c.2	<b>)</b>	Y X		2.5	Þ	2.5	n	
METALS	2,4,6-1 KINI I KOI OLUENE	7	ב	Ϋ́Z		7	ם	2	=	
METALS	2,6-DINITROTOLUENE	7	כ	Ϋ́		2	Ω	0	) <b>_</b>	
METALS	RDX	1.28	D	Ϋ́		1 28	· =	1 28	) <b>=</b>	
	ALUMINUM	16400		9450		00/21	)	14000	>	
	ANTIMONY	_	=	3.76		3.	:	1430		
	ARSENIC	7, 3	<b>-</b>	2.5		1	<b>&gt;</b>	1.25		
	BADITIM	12.0	-	2.3/		9	_	5.9	_	
	BARIOIM	196		163		181		213		
	BERYLLIUM	0.9		0.551		0.813		0 707		
	BORON	ΥN		×z		Ϋ́Z		V		
	CADMIUM	1.2	D	4.24		1.2	-		=	
	CALCIUM	2800		3510		\$710	)	7070	<b>-</b>	
	CHROMIUM	17.7	-	16.9		101	_	17.1	-	
	COBALT	6.05		3 70		200	•	17.1	-	
	COPPER	19.9		0000		07.70		).S.		
	IRON	18100		2002		17700		55		
	LEAD	21.7		326		2,50		15500		
	MAGNEGITIM	2.1.2		3/0		31.7		20.6		
	MODESTION AND AND AND AND AND AND AND AND AND AN	200		3520		7970		7210		
	MANGANESE	649		320		578		477		
	MERCURY	0.02	5	0.05	Б	0.02	, E	0.05	111	
	NICKEL	12		10.5		11.2		=	S	
	POTASSIUM	5610		2950		5260		4670		
	SILVER	0.803	ח	0.803	=	0.803	=	0 803	- 11	
	SODIUM	262		129	)	243	<b>o</b>	212	<b>-</b>	
	VANADIUM	21.8		14.3		24.3		(17		
	ZINC	78		2700		75.8		76.3		
SEMIVOLATILES	2,4-DINITROTOLUENE	٧X		×		N N		? ×		
	2,6-DINITROTOLUENE	٧X		X		Z		2 2		
	BUTYLBENZYL PHTHALATE	Y.		×		. Y		ζ <u>γ</u>		
	DI-N-BUTYL PHTHALATE	Y V		Ϋ́		×		ZZ		
	N-NITROSO DIPHENYLAMINE	NA		ž		Z		. Z		

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

		OBP-95-01A	OBP-95-02A	OBP-95-03A	OBP-95-04A	OBS-95-01	OBS-95-02
Group	Analytes	0.5 น	0.5 น	0.5 น	0.5 ณ	0.5 ft	0.5 ก
DIOXINS	2,3,7,8-TCDD	6.9E-07 U	3.4E-07 U	3.2E-06	2.0E-06 11	11 18-04 11	5 5E-07 11
	2,3,7,8-TCDF	2.2E-06	4.0E-07 U	3.9E-05	1.4E-06	1.7E-06	7.3E-07
	1,2,3,7,8-PeCDD	6.0E-07 U	4.2E-07 U	1.2E-05	2.7E-07 U	7.5E-07 U	3.3E-07 U
	1,2,3,7,8-PeCDF	1.2E-06	4.9E-07 U	6.2E-06	3.2E-07 U	7.9E-07	2.9E-07 U
	2,3,4,7,8-PeCDF	1.1E-06 U	5.3E-07 U	1.3E-05	3.3E-07 U	8.4E-07 U	4.4E-07
	1,2,3,4,7,8-HxCDD	9.9E-07	5.9E-07 U	9.8E-06	2.7E-06 U	3.1E-06 U	7.8E-07 U
	1,2,3,6,7,8-HxCDD	1.2E-06 U	4.8E-07 U	2.9E-05	2.2E-06 U	1.8E-06	4.6E-07
	1,2,3,7,8,9-HxCDD	2.3E-06	5.3E-07 U	4.0E-05	9.2E-07 U	2.4E-06 U	5.9E-07
	1,2,3,4,7,8-HxCDF	6.0E-06 U	3.4E-07	1.7E-05	1.0E-06 U	2,0E-06 U	2.3E-06 U
-	1,2,3,6,7,8-HxCDF	1.6E-06	3.7E-07 U	6.8E-06	2.8E-07	4.9E-07 U	7.4E-07
	1,2,3,7,8,9-HxCDF	1.9E-06	5.7E-07 U	1.6E-06 U	1.4E-06 U	9.9E-07 U	6.7E-07
	2,3,4,6,7,8-HxCDF	7.9E-06	3.3E-07 U	1.1E-05	4.2E-07 U	7.0E-07 U	2.2E-06
	1,2,3,4,6,7,8-HpCDD	2.3E-05	2.2E-06 U	3.6E-04	2.0E-05	1.4E-06 U	3.1E-06 U
	1,2,3,4,6,7,8-HpCDF	3.2E-05	2.1E-06 U	5.4E-05	5.8E-06	3.3E-06 U	6,8E-06 U
	1,2,3,4,7,8,9-HpCDF	1.0E-05	3.1E-07 U	2.5E-06	1.1E-06 U	1.3E-06 U	1.2E-06 U
	OCTACHLORODIBENZODIOXIN	1.2E-04	1.1E-05	9.3E-04	1.3E-04	9.4E-06 U	2.0E-05 U
	OCTACHLORODIBENZOFURAN	1.0E-04	7.3E-06 U	4.3E-05	1.8E-05	5.0E-06 U	1.2E-05
	TOTAL 2,3,7,8-TCDD EQUIVALENTS 2,6E-06	rs 2.6E-06	4.5E-08	3.6E-05	5.7E-07	1.2E-07	6.6E-07

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Surface Soil (continued)

Group	Analytes	OBS-95-03	t -03	OBS-95-04	3-04	OBS-95-05	50-1	OBS-95-06	2-06	OBS-95-07	0.1	OBS-95-08	80
								200		11 6.7		U.3 II	
DIOXINS	2,3,7,8-TCDD	2.7E-07	Ω	3.7E-07	Ξ	2 3E-07	Ξ	1 65 07	Ξ	90 20 9	=		:
	2 1 7 8-TCDE	A 612 03	=		;		<b>)</b>	10.10	<b>)</b>	0.UE-V0	<b>-</b>	4.1E-0/	3
	4,2,1,0-1 CDI	4.35-0/	>	4./E-0/	>	1.7E-07	D	1.3E-07	Þ	2.0E-07	)	2.1E-07	n
	1,2,3,7,8-PeCDD	3.0E-07	Þ	3.5E-07	Þ	2.1E-07		1.6E-07	Þ	2.3E-07		1 2E-07	=
	1,2,3,7,8-PeCDF	2.5E-07	ב	3.4E-07	n	1.7E-07		1.4E-07	- 1	2 1E-07	· =	3 25 07	) <u>:</u>
	2,3,4,7,8-PeCDF	2.6E-07	ם	3.6E-07	=	1 2E.07	=	1 SE 07	=	1 95 01	<b>,</b>	3.42.07	>:
	1.2.3.4.7.8-HxCDD	8 7E.07	=	1 50 05	· =	20.00	) <b>:</b>	10.00	<b>:</b>	1.05-07		3.4E-0/	)
	17 2 4 7 6 12 CDD	40.77.0	<b>:</b>	00-25.1	<b>&gt;</b> ;	3.35-0/	>	7.8E-07	>	3.2E-07	Þ	4.3E-07	Þ
	1,2,3,0,1,0-n,VD	4.9E-U/	<b>&gt;</b> 1	8.7E-07	<b>-</b>	2.2E-07	<b>-</b>	1.9E-07	Þ	2.2E-07	Ω	2.9E-07	=
	1,2,3,7,8,9-HxCDD	6.2E-07	<b>&gt;</b>	1.1E-06	ם	2.6E-07	n	2.2E-07	Þ	2.6E-07	=	3 4F-07	=
	1,2,3,4,7,8-HxCDF	1.6E-06	Þ	8.4E-07	D	4.2E-07		1.9F-07		4 SE-07	· =	1000	> =
	1,2,3,6,7,8-HxCDF	6.4E-07		3 1E-07		1 012 07	=	1 25 03	=	10-10-6	· :	1.05-07	<b>&gt;</b> ;
	1227894,000	10 10 7	:	20,000		1.75.0	<b>)</b>	1.45-07	>	7.76-07	<b>-</b>	8.0E-08	<b>-</b>
	1,4,5,7,0,7-HACDF	4.9E-U/	<b>-</b>	7.9E-07		2.3E-07	Þ	2.1E-07	Þ	3.0E-07	Ω	1.5E-07	ח
	2,3,4,0,7,6-HXCDF	1.5E-06		3.5E-07	Þ	2.6E-07	n	1.5E-07	Þ	3.6E-07	Ω	1.1E-07	=
	1,2,3,4,6,7,8-HpCDD	3.5E-06	Þ	3.1E-06	Þ	4.4E-06		9.0E-07	ם	2.3E-06		1 OF OF	)
	1,2,3,4,6,7,8-HpCDF	5.9E-06	ח	2.3E-06	D	2.5E-06	Ω	9.5E-07	D	2.9F-06	-	1 OE-06	Ξ
	1,2,3,4,7,8,9-HpCDF	1.6E-06	n	4.0E-07	n	3.4E-07		4.6F-07	=	5 6F.07	)	2010	) <b>:</b>
	OCTACHLORODIBENZODIOXIN	2.7E-05	n	2.8E-05	Ξ	5 4E-05		4 SE.06	=	10.20.0		2.0E-07	o :
	OCTACH! OPODIBENZOBILD AN	100		70 110 7	)			00-71	٠.	1.0C-00		3.45-00	>
	SCHOOL BENEATON OF THE STATE OF	1.05-03		4.815-00		6.7E-06		3.0E-06	<b>-</b>	6.8E-06		2.4E-06	n
	TOTAL 2,3,7,8-TCDD EQUIVALENT	ALENTS 2.3E-07		6.5E-08		2.6E-07		1.9E-09		1 4F.07		1 015.09	
										4:11.01		20-70	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

		OBS-95-09	-00	OBS-95-10	5-10	OBS-95-10	0	)BS-95-11	OBS-95-12	ORS-05-13	
Group	Analytes	0.5 ft		0.5 ก	_	0.5 ft (dup)		0.5 ณ	0.5 น	0.5 ก	
DIOXINS	2,3,7,8-TCDD	1.2E-07		1.0E-07	n	1.6E-07 U	8.0.8	11 80-3	1.16-07	3 5E-07	
	2,3,7,8-TCDF	1.8E-07	n	1.7E-07	n	2.5E-07 U	2.31	0. 20-7	2.8E-07 11	4 1E-07	=
	1,2,3,7,8-PeCDD	1.3E-07		2.0E-08	n	1.4E-07 U	1.6	0 20-	2.6E-07 11	1 4E-06	- <b>-</b>
	1,2,3,7,8-PeCDF	1.5E-07	n	1.3E-07	n	1.3E-07 U	1.51	n 20-3	2.2E-07 U	5 2E-07	) <b>=</b>
	2,3,4,7,8-PeCDF	1.1E-07		1.4E-07	n	6.4E-07	10.6	n 80-3	1.3E-07 U	1.3E-07	)
	1,2,3,4,7,8-HxCDD	2.6E-07	n	3.1E-07	ח	4.9E-07 U	3.31	O 20-3	1.7E-07	1.4E-06	
	1,2,3,6,7,8-HxCDD	1.8E-07	D	2.1E-07	Ω	3.3E-07 U	2.2E	O 40-7	4.5E-07	3.2E-06	
	1,2,3,7,8,9-HxCDD	2.1E-07	n	2.5E-07	D	4.0E-07 U	2.7	O 40-3	3.3E-07 U	4.7E-06	
	1,2,3,4,7,8-HxCDF	3.9E-07		2.0E-07	ם	1.0E-06	4.8E	-07	5.8E-07	8.4E-07	
	1,2,3,6,7,8-HxCDF	1.5E-07	n	8.0E-08	ם	3.1E-07 U	2.6E	O 10-1	3,0E-07 U	5.7E-07	=
	1,2,3,7,8,9-HxCDF	1.2E-07	n	8.4E-08		4.1E-07 U	2.0E	10-1	1.3E-07	1.6E-07	)
•	2,3,4,6,7,8-HxCDF	2.1E-07	n	1.4E-07	n	1.6E-06 U	2.8E	2.8E-07 U	3.5E-07 U	6.2E-07	
	1,2,3,4,6,7,8-HpCDD	1.3E-06		1.2E-06		2.3E-06 U	1.5	90-1	1.4E-05	6.1E-05	)
	1,2,3,4,6,7,8-HpCDF	1.6E-06	n	8.8E-07	n	5.1E-06 U	2.4E	n 90-3	5.5E-06 U	1.3E-05	
	1,2,3,4,7,8,9-HpCDF	4.1E-07	Þ	2.2E-07	ם	1.5E-06	3.2E	1-07 U	4.9E-07 U	9.3E-07	
	OCTACHLORODIBENZODIOXIN	6.2E-06	n	6.9E-06	n	1.7E-05	7.9E	n 90-1	1.4E-04	5.6E-04	
	OCTACHLORODIBENZOFURAN	3.6E-06	n	4.3E-06	D	1.7E-05	5.8E	n 90-7	1.2E-05	2.1E-05	
	TOTAL 2,3,7,8-TCDD EQUIVALEN	ALENTS 2.9E-07		2.0E-08		4.7E-07	8.3E-08	-08	4.2E-07	2.8E-06	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Surface Soil (continued)

Group	Analytes	OBS-95-14 0.5 ft	OBS-95-15 0.5 ft	OBS-95-16	16 OBS-95-17	OBS-95-18	OBS-95-19	6
					37 (3)	11.0.0	11.5.11	
DIOXINS	2,3,7,8-TCDD	2.0E-07 U	7 OF-08 11	1 0E 07	7 010 7		1	
	2 3 2 R.TCDE	1 25 00		10-70-1	0.05-0/	8.35-0/ 0	3.8E-0.7	<b>-</b>
	1001-011-01	1.25-00	1.75-07 0	3.5E-07	U 6.9E-06	3.4E-06	6 4F.06	
	1,2,3,7,8-PeCDD	9.6E-07	2.9E-07	2.4E-07	2 7E.06	ו עם טע		
	1,2,3,7,8-PeCDF	8.7E-07	1 45.07	1 45 07	20-21:3	20-20-1	1.15-00	
	277.0 0.77.0	10010	10-71-10	1.46-0/	7.35-06	7.4E-07	1.1E-06	
	*,5,4,4,4,0-recur	0.75-07	1.2E-07 U	1.9E-07	J 3.4E-06	1.0E-06	1 6F-06	
	1,2,3,4,7,8-HxCDD	2.0E-06	5.3E-07 U	1.6E-07	3.0E-06	1 28.06	20.20.0	=
	1,2,3,6,7,8-HxCDD	4.6E-06	3 6E-07	4 OE 07	20 20 20	00-777.T	7. E-0/	)
	123789.HvCDD	4 75 06	10-10-1	10-01-01	00-20.7	3.35-06	3.0E-06	
		4.25-00	4.3E-0/ U	3.8E-07	J 1.0E-05	4.4E-06	3.8E-06	
	1,2,3,4,7,8-HXCDF	3.4E-06	1.9E-07	5.8E-07	J 8.3E-06	1.5F-06	2 7E 06	
	1,2,3,6,7,8-HxCDF	2.2E-06	8.0E-08	7 1E.07	של של 4	20 10 10	2.7.7.00	
	1 2 1 7 8 0 UVCDE	100	0 10 10 10 10 10 10 10 10 10 10 10 10 10	7.11.7	4.2E-00	/0-38·/	1.1E-06	
	12,2,1,0,2-11ACDI	8.8E-U/	1.4E-07 U	1.2E-07	J 8.4E-07	4.3E-07 U	3.5E-07	=
	2,3,4,0,7,8-HXCDF	2.0E-06	1.0E-08 U	2.6E-07	J 5.7E-06	9.2E-07	1 315.06	· =
	1,2,3,4,6,7,8-HpCDD	1.3E-04	4.1E-06	5.2E-06	1.18-04	2 7E.05	20-25.1	>
	1,2,3,4,6,7,8-HpCDF	4.1E-05	1 2F.06 11	2 OF OK	2 15 06	CO-27:27	0.45.0	
	1234789 UnChE	20 20 6		2.75-00	3.1E-03	4.2E-06 U	9.2E-06	
	0.00 to 1.00 t	3.96-00	1.9E-07 U	4.3E-07	1.4E-06	5.3E-07 U	7.5E-07	
	OCIACHLORODIBENZODIOXIN	1.1E-03	2.3E-05	4.1E-05	3.9E-04	6 7F.05	3 25 6	
	OCTACHI ORODIRENZOFIJRAN	1 415 04	11 20 21 6	. 20 40 9		CO-21:0	3.2E-04	
		100	3.15-00	3.85-00	1.65-05	3.8E-06 U	1.2E-05	
	TOTAL 2 2 2 8 TODE COUNTY EN		1					
	1010E 4,3,1,0-1 CUD EQUIVALEIN	ALEIN 13 3.9E-06	2.3E-07	2.2E-07	1.0E-05	3.2E-06	4 1E.06	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Group	Analytes	OBS-95-20 0.5 ft	20	OBS-95-20 0.5 ft (dup)	5-20 dup)	OBS-95-21 0.5 ft	-21	OBS-95-22 0.5 ft	22	OBS-95-23 0.5 R		OBS-95-24 0.5 ft	24
SNIXOIC	2,3,7,8-TCDD	1.4E-07		2.6E-07	n	2.0E-07		3.4E-07	=	1.98-07		3.7E.07	Ξ
	2,3,7,8-TCDF	6.4E-07	n	6.2E-07	n	1,9E-06		6.8E-06	)	1.3E-06		1.2E-06	)
	1,2,3,7,8-PeCDD	3.0E-07	n	3.1E-07		2.6E-07	ח	1.3E-06		3.4E-07		2.7E-07	Ξ
	1,2,3,7,8-PeCDF	3.5E-07		2.4E-07	Ω	4.6E-07	n	4.8E-06		7.2E-07		2.7E-07	=
	2,3,4,7,8-PeCDF	3.5E-07		3.5E-07	n	6.4E-07		2.2E-06		5.1E-07 U	_	3.7E-07	Ò
	1,2,3,4,7,8-HxCDD	4.0E-07	Þ	3.5E-07	n	6.2E-07	n	1.5E-06		4.5E-07 U	_	5.9E-07	D
	1,2,3,6,7,8-HxCDD	4.3E-07	n	5.5E-07	n	4.9E-07		4.1E-06		9.6E-07		3.5E-07	
	1,2,3,7,8,9-HxCDD	4.3E-07	n	3.5E-07	n	6.1E-07		5.7E-06		1.4E-06		4.5E-07	D
	1,2,3,4,7,8-HxCDF	5.3E-07	n	5.1E-07		4.5E-06	n	6.5E-06	D	4.1E-06 U		1.9E-06	D
	1,2,3,6,7,8-HxCDF	3.6E-07	Þ	2.0E-07	n	1.3E-06	Þ	1.8E-06		1.1E-06 U	_	4.7E-07	
	1,2,3,7,8,9-HxCDF	1.9E-07	n	1.0E-07	n	1.7E-06		1.5E-06		1.0E-06		4.4E-07	
	2,3,4,6,7,8-HxCDF	4.7E-07	n	2.8E-07	n	5.8E-06		5.4E-06		4.8E-06		1.1E-06	
	1,2,3,4,6,7,8-HpCDD	5.3E-06		5.6E-06		7.SE-06	n	8.3E-05		1.9E-05		3.3E-06	n
	1,2,3,4,6,7,8-HpCDF	2.0E-06	Ω	1.8E-06	n	1.9E-05	n	2.9E-05		1.7E-05 U		5.5E-06	
	1,2,3,4,7,8,9-HpCDF	2.1E-07	n	2.5E-07	n	6.1E-06	ח	5.4E-06		4.1E-06		9.4E-07	=
	OCTACHLORODIBENZODIOXIN	3.8E-05		3.7E-05		5.8E-05	n	6.0E-04		1.3E-04		2.1E-05	=
	OCTACHLORODIBENZOFURAN	3.5E-06	ם	3.8E-06	Ω	1.0E-04		6.6E-05		4.4E-05		1.2E-05	)
	TOTAL 2 3 7 8-TCDD FOLIVALENT	AI FNTS 4 3F-07		2 00 07		1 20 00		20 23		20		7	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Group	Analytes	OBS-95-25	5 OBS-95-26	5-26	OBS-95-27	-27	OBS-95-28	80	OBS-95-28	5-28	
				2	0.01		11 C.U		0.5 II (dub)	(dnp)	
DIOXINS	2,3,7,8-TCDD	2 6E-07	1 6 15 07	=	20 315 3	:	1				
	27.0 4.0.0		10-215-01	<b>-</b>	3.7E-07	<b>-</b>	3.7E-07		1.0E-06	⊃	
	2,3,1,0-1,CDF	2.3E-06	5.1E-06		7.6E-07		1.0E-06		1 SE.06	=	
	1,2,3,7,8-PeCDD	4.7E-07	6.5E-07		5 6E.07	=	2 50 07	-		:	
	1.2.3.7.8.PeCDF	A OE 07	10 10 0		20.00	<b>)</b>	3.25-07	_	8.75-07	<b>-</b>	
	1001011011	4.7E-U/	00-20.2		9.0E-07	D	7.0E-07		8.3E-07		
	2,3,4,7,8-reCIDF	7.0E-07	J 2.3E-06		9.4E-07	<b>-</b>	\$ 0F-07		8 KH 07	-	
	1,2,3,4,7,8-HxCDD	9.6E-07	J 6.9E-07		אי שני ש	- =	0 50 00		0.00.0	<b>:</b>	
	1.2.3.6.7.8-HxCDD	\$ 75 07	70 20 1		0.75	<b>)</b>	7.0E-07	<b>-</b>	2.8E-00	>	
	440.11.00.4.4.1	7.75-07	1.05-00		3.7E-06	<b>&gt;</b>	8.6E-07		1.7E-06	⊃	
	1,2,3,7,8,9-HXCDD	7.3E-07 (	J 2.0E-06	n	4.8E-06	n	7.9E-07	_	2 1E.06	=	
	1,2,3,4,7,8-HxCDF	3.1E-06	1 115.05	11	7 15 07	· =		, •	4.1L-W	> ;	
	123678 H*ChE	200	20-21-1	>	4.1E-0/	3	3.45-00	_	1.6E-06	Þ	
	17.7.10.11.00.11	9.75-07	3.3E-06		2.8E-07	5	9.6E-07		6.0E-07	n	
	1,2,3,7,6,9-HXCDF	4.5E-07 (	1.9E-06	ב	5.7E-07	Ð	9.9E-07	_	1 2E.06	=	
	2,3,4,6,7,8-HxCDF	1.4E-06	7 SE.0K		7 00 00	: =	2010	,	1.41.00	> :	
	1734678 12201	2010	20.7		4.0E-0/	3	3.4E-00		8.5E-07	>	
	UUCAL-0,1,0,1,0,1,1,1	4.96-06	1.6E-05		3.3E-06	n	1.7E-05		1.7E-05		
	1,2,3,4,0,7,8-HpCDF	6.1E-06	3.5E-05		2.9E-06	n	1.1E-05	_	7 05 06	=	
	1,2,3,4,7,8,9-HpCDF	9.0E-07	J 7.3E-06		1 1E-06	; <u>=</u>	20 25 0	` -	00000	>:	
	OCTACH! ORODIRENZONIOVIN	1 00 00			00-71.	3 ;	00-2C-7	_	1.25-00	>	
		3.9E-05	1.3E-04		2.1E-05	5	1.6E-04		1.5E-04		
	OCI ACHLORODIBENZOFURAN	1.4E-05	1.2E-04		9.4E-06	_	1.8E-05		1.58-05		
	TOTAL 2,3,7,8-TCDD EQUIVALEN	IVALENTS 5.6E-07	4.2E-06		8.5E-08		1.6E-06		3.7E-07		

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Subsurface Soil

		OBP-92-101	-101	OBP-92-102	2-102	OBP-92-103	2-103	OBP-92-104	2-104	OBP-92-201	2-201	OBP-92-202	202
Group	Analytes	Sft		SR		4 11	سر	10 ft	2	2 R	یے	SR	
ANIONS	FLUORIDE	19.2	D	19.2	n	19.2	D	19.2	n	19.2	n	19.2	n
	NITRATE	3.36	D	3.36	n	4.58		3.36	n	3.36	n	3.36	ח
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.352	n	0.352	n	0.352	Ω	0.352	Ω	0.352	n	0.352	ח
	2,4-DINITROTOLUENE	0.744	n	0.744	D	0.744	Ω	0.744	Ω	0.744	Ω	0.744	n
	2,4,6-TRINITROTOLUENE	0.931	n	0.931	ם	0.931	ם	0.931	n	0.931	n	0.931	n
	RDX	0.445	D	0.445	n	0.445	n	0.445	Ω	0.445	Ω	0.445	Þ
METALS	ALUMINUM	Ϋ́		Y Y		Ν		٧X		Ϋ́		٧V	
	ANTIMONY	89	D	34	n	34	n	34	n	9.09		340	n
	ARSENIC	24	D	240	n	74	Ω	240	n	24	Ω	95.2	
	BARIUM	180		26		120		62		310		2300	
	BERYLLIUM	0.078	Þ	0.078	n	0.078	n	0.078	ח	0.078	n	0.078	n
	CADMIUM	4.2	Þ	0.424	n	0.424	Ω	0.424	n	0.424	Ω	25	Ω
	CALCIUM	٧		NA		Ϋ́		٧X		٧N		×z	
	CHROMIUM	26.5		5.96		15.6		7.81		10.8		150	
	COBALT	×		Ϋ́		AA		٧x		Ν		YZ.	
	COPPER	110		5.21		43		9.7		110		1700	
	IRON	40000		6500		24000		14000		13000		290000	
	LEAD	280		7		<u>8</u>		12		11000		3600	
	MAGNESIUM	۲X		NA		٧X		٧Z		٧×		٧X	
	MANGANESE	Ϋ́		N N		Ϋ́		٧z		NA		٧X	
	MERCURY	0.443		0.0543		0.168		0.0962		0.0643		0.0259	n
	NICKEL	7.47		2.46	n	2.46	n	2.46	Ω	2.46	n	110	
	POTASSIUM	Ϋ́		۷		×		٧z		ΥN		٧X	
	SILVER	0.156		0.0345		0.115		0.0376		0.77		ν.	
	SODIUM	٧		Ν		٧X		Ϋ́Z		٧X		٧Z	
	THALLIUM	170	Þ	170	n	170	n	170	n	170	n	347	
	VANADIUM	Ϋ́		Ϋ́		Ν		٧z		Ϋ́		۲ ۲	
	ZINC	380		22.8		1200		150		380		11000	
SEMIVOLATILES	2,4-DINITROTOLUENE	0.39	Ω	0.39	D	0.39	n	0.39	Ω	0.39	Ω	0.39	ב
	BIS (2-ETHYHEXYL) PHTHALATE	0.39	n	0.39	n	1.1		0.39	n	0.39	n	0.39	n
	N-NITROSO DIPHENYLAMINE	0.33	S)	0.33	5	0.33	n	0.33	ħ	0.33	n	0.33	ß

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Subsurface Soil (continued)

	•	OBP-92-203	12-203	OBP-92-204	12-204	OBP-	OBP-92-301	OBP-	OBP-92-302	OBP-5	OBP-92-303	OBP-92	304
Group	Analytes	7.5 ft	=	12	2	11	2	5 17	=	7.5	7.5 ft	10 ft	
ANIONS	FLUORIDE	19.2	Ω	19.2	n	19.2	ח	12.4		10.7	=	, OI	=
	NITRATE	3.36	n	9.47		2.67	n	2.67	=	3,75	) <b>=</b>	7.71	<b>&gt;</b> =
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.352	n	0.352	Ω	7.4		17	)	0.352	) <b>=</b>	0.357	) <b>=</b>
	2,4-DINITROTOLUENE	0.744	ם	0.744	n	0.744	n	0.744	Ω	0.744	) <b>=</b>	0.744	=
	2,4,0-1 KINIT KOTOLUENE	0.931	ם	0.931	ב	8.52		16		0.931	· =	0.031	=
	RDX	0.445	ם	0.445	ח	0.445	n	0.445	D	0.445	) <b>=</b>	0.445	> =
MELALS	ALUMINUM	Ϋ́		٧Z		Ϋ́		X	<b>,</b>	Z Z	•	Q+.	>
	ANTIMONY	340	n	34	n	34	n	75	=	37	=	5 2	-
	ARSENIC	24	n	240	Ω	48	=	240	) <b>=</b>	. 6	) <u>:</u>	- 6	<b>)</b>
	BARIUM	1700		170		120	,	89	)	061	>	130	)
	BERYLLIUM	0.078	n	0.078	ח	0.078	Ω	0.078	=	0.78	=	71.0	Ξ
	CADMIUM	4.2	n	0.424	n	0.424	<b>-</b>	0 424	) <u>=</u>	A	> =	0.10	> =
	CALCIUM	٧X		×		Z	ı	, v	)	7.7	)	6.5	)
	CHROMIUM	220		24.8				2 2		Z ;	;	۲ ۲	
	COBALT	7.4		0.4.7		1.4.		9.40		36	D	7.8	n
	COBRED	\ Z		۲ ۲		۲ ۲		<b>&lt;</b> Z		×z		×Z	
	COLUMN	0000		20		7.33		3.59		20	Þ	8.8	
	IRON	110000		29000		13000		9200		12000		8700	
	LEAD	17000		28		7.3		5.5		7.2		4.6	
	MAGNESIUM	Y Z		Ϋ́		٧		٧Z		Z		Y Z	
	MANGANESE	٧ Z		٧X		Ϋ́		٧z		Z		Y Z	
	MERCURY	0.0259	Þ	0.0259	D	0.0259	n	0.0776		0.0259	=	0.00	=
	NICKEL	48		2.46	n	2.46	n	2.46	Ω	25	) <b>=</b>	4 9	) <u>=</u>
	POLASSIUM	۲×		٧Z		NA		Ϋ́Z		Ϋ́	<b>)</b>	Ž	)
	SILVER	12		0.0778		0.0356		0.043		0.0146	=	0.0146	Ξ
	SODIUM	٧X		Ϋ́		X		Z		V V	>	V.0140	)
	THALLIUM	170	Ω	170	Ω	170	Ξ	170	=	1700	=	V 1	:
	VANADIUM	۲×		Y.		X	)	2	•	3 2	>	3:	>
	ZINC	7700		7.5		35		17.3		5	:	¥ .	;
SEMIVOLATILES	2,4-DINITROTOLUENE	0.39	=	0.30	=	30	-	0,70	:	ဂ ဗိ	o :	91	<b>)</b>
	BIS (2-ETHYHEXYL) PHTHALATE	0.39	) <b>=</b>	0.30	<b>=</b>	0.39	> =	0.39	<b>&gt;</b> :	0.39	⊃:	0.39	<b>)</b>
	N-NITROSO DIPHENYI AMINE	0 33	. =	0.32	) <u> </u>	60.0	> :	0.39	<b>&gt;</b> :	0.39	<b>O</b>	0.39	<b>-</b>
		6:5	3	0.33	3	0.33	3	0.33	5	0.33	ß	0.33	5

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Subsurface Soil (continued)

i		OBP-92-401	-401	OBI'-92-402	706-7	OBP-92-403	-403	OBP-92-404	5-404	OBP-94-01B	4-01B	OBY-94-01C	ر د
Group	Analytes	2.5 ก	ايع	5 ft	ابو	7.5 ft	يسع	9 6	اد	2 N	احر	5 N	
ANIONS	FLUORIDE	19.2	n	19.2	ם	19.2	Ω	19.2	Þ	ž		Ž	
	NITRATE	3.36	Ω	2.67	n	3.36	n	3.36	D	×		ž	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.352	n	0.352	n	0.352	n	0.352	n	0.922	UR	0.922	UR
	2,4-DINITROTOLUENE	0.744	n	0.744	n	25		0.744	ח	2.5	ב	2.5	n
	2,4,6-TRINITROTOLUENE	0.931	D	0.931	Ω	0.931	n	0.931	n	7	Ω	2	ר
	RDX	0.445	n	0.445	Ω	0.445	n	0.445	Ω	1.28	D	9.41	)
METALS	ALUMINUM	Ϋ́		۲×		٧X		42		6580		1100	D
	ANTIMONY	34	n	34	n	34	Ω	3.42	n	19.6	n	19.6	D
	ARSENIC	72	n	72	n	24	n	24	D	9.19		3.14	
	BARIUM	8		86		33		38		65.2		142	
	BERYLLIUM	0.078	Þ	0.078	D	0.078	n	0.078	n	0.427	ח	0.427	n
	CADMIUM	0.424	n	0.424	n	0.424	Ω	0.424	n	1.2	n	1.2	D
	CALCIUM	Υ		۲Z		٧X		۲×		14200		120000	
	CHROMIUM	10.9		9.93		6.03		3.9	Ω	11.7		6.05	
	COBALT	Ϋ́		٧X		٧z		Ϋ́Z		2.75		2.5	n
	COPPER	10.8		9.43		4.23		2.61		6.46		77.77	
	IRON	10000		11000		7300		2700		10900		1490	n
	LEAD	8.5		8.4		4.2		2.4		7.44	ם	17.71	
	MAGNESIUM	Ϋ́		٧z		ΥN		۲×		2220		5120	
	MANGANESE	¥		<b>∀</b> Z		٧z		٧z		25.4	n	128	
	MERCURY	0.0259	n	0.0259	Ω	0.0302		0.0259	n	0.05	ם	0.0684	_
	NICKEL	2.46	D	2.46	n	2.46	n	2.46	Þ	5.19		4.84	
	POTASSIUM	×		۷		٧X		٧X		1740		302	n
	SILVER	0.0405		0.0276		0.0146	Þ	0.0146	n	0.803	n	0.803	ר
	SODIUM	Ϋ́		ΥN		ΥN		٧X		160		273	
	THALLIUM	20	n	20	n	170	Þ	170	n	34.3	Ω	34.3	D
	VANADIUM	Ϋ́		Y X		Ϋ́		ΥV		19.5	_	3.56	5
	ZINC	<b>3</b>		53		14.9		15.5		21.3		31.9	
SEMIVOLATILES	2,4-DINITROTOLUENE	1.4		0.39	Ω	0.39	D	0.39	Ω	Ν		Ϋ́Z	
	BIS (2-ETHYHEXYL) PHTHALATE	0.39	⊃	0.39	n	0.39	n	0.39	D	۷X		۲	
	CALLANDER CALLAND	_		,,		,							

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Subsurface Soil (continued)

Groun	Amoliston	OBP-94-01D	4-01D	OBP-94-02B	4-02B	OBP-94-02C	4-02C	OBP-94-02D	4-02D	OBP-94-02E	4-02E	OBP-94-02F	02F
dioin	Alialytes	7		7		S		7.18		10	اع	31	
ANIONS	FLUORIDE	Š		Y Z		Ϋ́		Z		Z		Z	
	NITRATE	٧X		¥		N		×Z		N V		Z	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	S	0.922	Ω	0.922	Ω	0.922	n	0.922	Ω	0.922	n
	2,4-DINITROTOLUENE	2.5	n	2.5	Ω	2.5	n	2.5	Ω	2.5	n	2.5	n
	2,4,6-TRINITROTOLUENE	7	Þ	7	Þ	7	n	7	n	7	n	7	D
	RDX	1.28	n	1.28	ב	1.28	n	1.28	Ω	1.28	Ω	1.28	ח
METALS	ALUMINUM	1100	D	1180	Þ	1180	n	28100		6750		13600	,
	ANTIMONY	9.61	n	19.6	5	19.6	n	19.6	n	19.6	Б	19.6	5
	ARSENIC	3.03		2.5	n	2.5	Ω	2.99		3.13		4.29	
	BARIUM	151		8.77	n	8.77	Ω	141		79.8		66	
	BERYLLIUM	0.427	Þ	0.427	ב	0.427	n	1.08		0.427	Ω	0.548	
	CADMIUM	1.2	Þ	1.2	n	1.2	n	1.2	n	1.2	n	1.2	ח
	CALCIUM	100000		606		15500		3940		100000		2740	
	CHROMIUM	8.16		1.62	Ω	1.62	n	26.3		1.62	Ω	16	
	COBALT	2.5	D	2.5	n	2.5	n	9.4		2.5	Ω	4.75	
	COPPER	9.31		2.84	ם	2.84	n	13.3		5.17		10.6	
	IRON	1490	n	1300	n	1300	n	22000		6500		11800	
	LEAD	14.9		7.44	n	7.44	n	13		7.44	D	19.1	
	MAGNESIUM	2770		178	D	178	n	7870		5410		3310	
	MANGANESE	131		21.2	n	21.2	n	137		21.2	n	239	
	MERCURY	0.0558		0.02	n	0.05	) D	0.05	D	0.02	n	0.05	ם
	NICKEL	5.45		2.74	n	2.74	n	12.2		4.02		7.21	
	POTASSIUM	302	D	320	D	320	n	7260		1620		3610	
	SILVER	0.803	n	0.803	n	0.803	n	0.803	Ω	0.803	n	0.803	n
	SODIUM	315		50.1		51		573		213		232	
	THALLIUM	34.3	n	34.3	ם	34.3	n	34.3	n	34.3	n	34.3	Ω
	VANADIUM	3.56	5	3.15	Ω	3.15	n	34.8		3.15	Ω	19.7	
	ZINC	39.6		60	D	33	Ω	48.5		9.91		48.1	
SEMIVOLATILES	2,4-DINITROTOLUENE	Y Z		VZ		NA		Ϋ́Z		٧×		٧z	
	BIS (2-ETHYHEXYL) PHTHALATE	Ϋ́		٧X		٧X		٧Z		<b>&lt;</b> Z		٧Z	
	N-NITROSO DIPHENYLAMINE	Ϋ́		VΑ		NA		VA		NA		NA	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Subsurface Soil (continued)

•	•	OBP-94-03B	t-03B	OBP-94-03C	-03C	OBP-94-	1-03D	OBP-94-04B	1-04B	OBP-94-04C	-04C	OBP-94-(	04D
Group	Analytes	2 N	ابو	5 0		7.1		2.0	_	5 N		7 N	
ANIONS	FLUORIDE	٧z		Ϋ́Z		X		X		Ą		V N	
	NITRATE	٧		ΥN		Ž		×		Ž		Z Z	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	Ω	0.922	n	0.922	Ω	0.922	ם	0.922	n	0.922	Ω
	2,4-DINITROTOLUENE	2.5	Ω	2.5	Ω	2.5	n	2.5	ם	2.5	ח	2.5	D
	2,4,6-TRINITROTOLUENE	7	n	2	Þ	7	n	2	n	7	Ω	7	ח
	RDX	1.28	ח	1.28	n	1.28	n	1.28	Ω	1.28	Ω	1.28	ם ס
METALS	ALUMINUM	1180	n	1180	Ω	1180	n	11500		8470	ı	7830	)
	ANTIMONY	19.6	S	19.6	n	19.6	m	19.6	n	19.6	S	19.6	5
	ARSENIC	2.5	D	2.5	D	2.5	Ω	4.55		3.88		3.56	;
	BARIUM	8.77	n	8.77	n	8.77	Ω	103		59		68.7	
	BERYLLIUM	0.427	n	0.427	n	0.427	Ω	0.427	n	0.427	n	0.427	D
	CADMIUM	1.2	ח	1.2	n	1.2	Þ	1.2	·	1.2	n	1.2	ם כ
	CALCIUM	857		18800		2800		21000		16000		36300	)
	CHROMIUM	1.62	Ω	1.62	D	1.62	Ω	14.7		11.6		10.2	
	COBALT	2.5	Ω	2.5	D	2.5	ם	2.94		4.23		2.5	ם
	COPPER	2.84	n	2.84	Ω	3.54		16.6		10		5.59	
	IRON	1300	Ω	1300	n	1300	Ω	10100		9780		8340	
	LEAD	7.44	n	10		19		25.9		11.8		7.44	ם
	MAGNESIUM	178	ח	1450		1000		3430		5080		4690	
	MANGANESE	21.2	n	21.2	D	21.2	Ω	190		167		108	
	MERCURY	0.02	D	0.02	n	0.02	n	0.05	Ω	0.05	n	0.0578	
	NICKEL	2.74	n	2.74	n	2.74	n	7.15		7.95		4.5	
	POTASSIUM	320	Þ	320	n	320	n	3060		2250		2380	
	SILVER	0.803	n	0.803	D	0.803	Þ	0.803	n	0.803	n	0.803	ח
	SODIUM	38.7	n	103		252		257		205		314	
	THALLIUM	34.3	n	34.3	n	34.3	Ω	34.3	n	34.3	Ω	34.3	ח
	VANADIUM	3.15	Þ	3.15	n	3.15	n	21.8		17.1		15.8	
	ZINC	3	n	ဗ	n	٣	n	87		35.3		16.2	
SEMIVOLATILES	2,4-DINITROTOLUENE	ź		۷×		×Z		ΥN		Ϋ́		٧N	
	BIS (2-ETHYHEXYL) PHTHALATE	Y Z		Ϋ́Z		Ϋ́Ζ		٧X		۲×		٧٧	
	N-NITROSO DIPHENYLAMINE	¥Z		AN		ΥN		NA		٧X		٧٧	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Subsurface Soil (continued)

		OBP-94-05C	4-0 <b>S</b> C	OBP-9	OBP-94-05D	OBP-9	OBP-94-05E	OBP-94-06B	4-06B	OBP-9	OBP-94-06C	ORP-94-06D	0.0
Group	Analytes	SR	-	7 N	2	10 N	~	2 ft	22	5 ft	2	7 m	700
ANIONS	FILIORIDE	Ž	•	7		2		;		;			
	NITDATE	2 2				<b>X</b> :		Y :		\ Z		Y Z	
Savio Idva	1 2 6 TRIVILLE ORDINATION	Y 20		4	1	YZ,		Y Z		<b>X</b>		۲ ۲	
EAFLUSIVES	1,3,3-1 KINII KOBENZENE	0.922	<b>&gt;</b>	0.922	<b>&gt;</b>	0.922	n	0.922	ם	0.922	n	0.922	D
	2,4-DINITROTOLUENE	2.5	n	2.5	n	2.5	Ω	2.5	ח	2.5	n	2.5	=
	2,4,6-TRINITROTOLUENE	7	Þ	7	Ω	7	n	7	ם	2	=	,	=
	RDX	1.28	ב	1.28	D	1.28	n	1.28	=	1 28	=	1 28	=
METALS	ALUMINUM	8780		1100	=	1100	=	8920	)	0011	) <b>=</b>	1.20	) <b>:</b>
	ANTIMONY	19.6	n	19.6	n	19.6	· =	19.61	=	10 6	=	10 6	) <b>=</b>
	ARSENIC	5.29		3.97		2.5	=	3 36	)	3 85	>	3.51	>
	BARIUM	57.7		10.1	n	10.1	· =	89.7		2.5		8 %	
	BERYLLIUM	0.427	Ω	0.427	n	0.427	· =	0.477	=	0.477	=	0.07	Ξ
	CADMIUM	46.5		12.6		3.98	ı	1.2	· =	- 2	) <b>=</b>	13.	> <b>=</b>
	CALCIUM	11100		6840		20400		24600	)	37800	)	5.4800	)
	CHROMIUM	8.59		6.88		1.16	n	10.5		1.16	=	0 33	
	COBALT	2.5	D	2.63		2.5	Þ	3.45		2.5	=	3.25	
	COPPER	2600		311		16.4		7,12		3.32	)	4.89	
	IRON	8630		1490	n	1490	D	9830		1490	Ω	1490	=
	LEAD	30.7		6.96		18.3		7.44	Ω	7.44	Ω	7.44	
	MAGNESIUM	1610		1050		2100		3840		4650		4670	)
	MANGANESE	142		25.4	n	25.4	D	192		25.4	Ω	25.4	
	MERCURY	0.02	ח	0.05	D	0.02	D	0.02	Ω	0.05	n	0.057	1
	NICKEL	6.01		3.36		2.74	n	5.66		2.74	n	4.36	
	POTASSIUM	1550		302	ם	302	ם	2330		302	Ω	302	=
	SILVER	0.803	n	0.803	n	0.803	Ω	0.803	D	0.803	Þ	0.803	
	SODIUM	89.5		60.5		38.7	n	114		197		191	,
	THALLIUM	34.3	n	34.3	Ω	34.3	Ω	34.3	D	34.3	D	34.3	
	VANADIUM	3.56	n	3.56	5	3.56	n	3.56	S	3.56	B	3.56	n
	ZINC	2300		380		55.9		29.5		3.92	Ω	3.92	=
SEMIVOLATILES		Ϋ́		Y N		NA		NA NA		ž		×	,
	BIS (2-ETHYHEXYL) PHTHALATE	Ϋ́		NA		Ϋ́		٧X		٧X		Ϋ́Z	
	N-NITROSO DIPHENYL AMINE	×		2		Z		V.V		7.77			

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Subsurface Soil (continued)

Group	Analytes	OBP-94-06E 10 ft	1-06E	OBP-94-07B 2 ft	t-07B t	OBP-94-07C 5 ft	t-07C	OBP-94-07D 7 ft	4-07D t	OBP-94-07E 10 ft	4-07E	OBP-94-08B 2 ft	88
ANIONS	FLUORIDE	ΑN		Ϋ́		ž		×		X		Y Z	
	NITRATE	NA		ΥN		ž		Ϋ́Z		Z		Ž	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	ח	0.922	Ω	0.922	Ω	0.922	Ω	0.922	1	0.922	=
	2,4-DINITROTOLUENE	2.5	n	2.5	Ω	2.5	n	2.5	n	2.5	· =	2.5	=
	2,4,6-TRINITROTOLUENE	7	n	7	n	7	ח	2	<b>-</b>	2	=	,	=
	RDX	1.28	n	1.28	n	1.28	n	1.28	ם י	1.28	) <b>=</b>	1 28	=
METALS	ALUMINUM	1100	Ω	13200		1100	n	6270	ı	100	· =	20300	)
	ANTIMONY	19.6	Ω	19.6	Ω	19.6	D	19.6	=	19.6	· =	9 61	
	ARSENIC	2.5	Ω	7.99		3.31		3.99		7.09	)	29.9	)
	BARIUM	10.1	n	188		81.1		82.6		56.6		225	
	BERYLLIUM	0.427	n	0.575		0.427	Ω	0.427	n	0.427	Ω	0.87	
	CADMIUM	1.2	n	Ξ		1.2	n	1.2	n	1.2	n	5.14	
	CALCIUM	27800		16700		38200		46700		35700		12200	
	CHROMIUM	1.16	⊃	23.2		7.52		10.1		8.04		20.6	
	COBALT	2.5	ם	5.29		2.5	n	2.68		2.5	n	5.21	
	COPPER	2.84	n	85.3		30.5		31.7		19.1		22.1	
	IRON	1490	n	42200		1490	n	8470		8220		20400	
	LEAD	7.44	n	607		9.99		96.4		50.9		25.6	
	MAGNESIUM	1640		4840		3820		4700		4620		7730	
	MANGANESE	25.4	n	534		142		148		135		472	
	MERCURY	0.05	D	0.259	_	0.173	_	0.204	_	0.02		0.706	
	NICKEL	2.74	n	11.8		3.38		3.87		6.59		12.6	
	POTASSIUM	302	n	3730		302	n	1890		302	n	5980	
	SILVER	0.803	ם	0.803	n	0.803	Þ	0.803	ח	0.803	n	0.803	
	SODIUM	85.5		190		114		201		140		249	)
	THALLIUM	34.3	Þ	34.3	D	34.3	n	34.3	D	34.3	ב	46.7	
	VANADIUM	3.56	5	24	_	3.56	n	3.56	n	3.56	n	30.8	_
	ZINC	3.92	D	248		102	•	116		94.3		137	
SEMIVOLATILES	2,4-DINITROTOLUENE	ΥN		Ϋ́		Ν		NA		NA		٧	
	BIS (2-ETHYHEXYL) PHTHALATE	Y Y		ΝA		×		٧X		۲ ۲		Ϋ́Z	
	N-NITROGO DIPHENYI AMINE	V		2				• • • •					

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

## Subsurface Soil (continued)

		OBP-94-08C	780-	OBP-94-08D	4-08D	OBP-94-08E	4-08E	OBP-94-09B	4-09B	OBP-94-09C	4-09C	OBP-94-09C	06C
Orond	Analytes	211	_	7.8	_	10	2	2 R	ابع	5.1	ايع	5 ft (du	(di
ANIONS	FLUORIDE	N A		Ϋ́		٧X		×		ž		X	
	NITRATE	¥		N		NA		X		×		ž Z	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	n	0.922	Ω	0.922	Ω	0.922	Ω	0.922	S	0.922	m
	2,4-DINITROTOLUENE	2.5	ח	2.5	n	2.5	n	2.5	n	2.5	n	2.5	n
	2,4,6-TKINITROTOLUENE	7	⊃	7	Þ	7	n	7	n	7	ם	7	ם
	RDX	1.28	n	1.28	n	1.28	Ω	1.28	n	1.28	Ω	1.28	ם
METALS	ALUMINUM	1100	n	1100	Ω	1100	Ω	18600		5500		4580	)
	ANTIMONY	9.6	D	19.6	n	19.6	n	19.6	Ω	19.6	Ω	19.6	n
	ARSENIC	2.68		2.5	n	2.5	Ω	4.51		4.72		4.6	)
	BARIUM	99.3		10,1	n	10.1	Ω	148		55.9		51.1	
	BERYLLIUM	0.427	n	0.427	n	0.427	ם	0.767		0.427		0.427	Ξ
	CADMIUM	1.2	Ω	1.2	Ω	1.2	n	1.2	Ω	1.2	n	1.2	) <b>=</b>
	CALCIUM	61000		15900		17100		3940		23500	<b>)</b>	21700	)
	CHROMIUM	7.69		1.16	n	1.16	n	20.6		8.1		7.58	
	COBALT	3.16		2.5	n	2.5	D	4.2		2.79		2.96	
	COPPER	4.37		2.84	D	5.24		13.3		2.84	Ω	4.7	
	IRON	1490	n	1490	n	1490	Ω	16900		7280		6570	
	LEAD	7.44	n	7.44	n	7.44	n	7.44	n	7.44	n	7.44	D
	MAGNESIUM	3790		943		1450		6180		2520		2230	,
	MANGANESE	25.4	Þ	25.4	n	25.4	n	387		27.9	Ω	27.9	D
	MERCURY	0.0542		0.05	D	0.05	n	0.05	n	0.05	n	0.05	Þ
•	NICKEL	3.58		2.74	n	2.74	n	10.1		4.74		5.65	
	POTASSIUM	302	n	305	n	305	Ω	5470		1050		905	
	SILVER	0.803	n	0.803	n	0.803	n	0.803	n	0.803	ລ	0.803	=
	SODIUM	223		50.2		9.08		317		188		173	
	THALLIUM	34.3	Ω	34.3	n	34.3	Ω	34.3	Ω	34.3	Ω	34.3	n
	VANADIUM	3.56	5	3.56	5	3.56	n	26.4	_	2.81	Ω	2.81	Ω
	ZINC	3.92	n	3.92	n	3.92	Ω	53.1		18.6		3.53	ם
SEMIVOLATILES	2,4-DINITROTOLUENE	Y :		YZ.		Ϋ́		٧X		Ν		Ν	
		Y Z		ΥZ		×		ΥZ		ΝA		٧z	
	N-NITROSO DIPHENYLAMINE	¥		YN NA		NA		NA		NA		NA	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Subsurface Soil (continued)

3	A	OBP-94-09D	Q60-1	OBP-94-09E	1-09E	OBP-94-09E	4-09E	OBP-94-10B	4-10B	OBP-94-10C	t-10C	OBP-94-10D	100
dnoro	Alialytes			10		10 ff (	(dnb)	2.1	اير	51		7 N	
ANIONS	FLUORIDE	٧N		٧×		X		Z		Ž		Ž	
	NITRATE	٧X		٧X		٧X		Y Z		Z		ž Z	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	5	0.922	n	0.922	n	0.922	n	0.922	n	0.922	5
	2,4-DINITROTOLUENE	2.5	n	2.5	ם	2.5	Ω	2.5	n	2.5	n	2.5	: <b>-</b>
	2,4,6-TRINITROTOLUENE	7	<b>-</b>	7	n	7	n	7	ם	7	D	2	<b>=</b>
	RDX	1.28	D	1.28	Ω	1.28	n	1.28	n	1.28	'n	1.28	î
METALS	ALUMINUM	7760		111	Ω	111	Þ	6390		777	ם י	111	) D
	ANTIMONY	19.6	ח	19.6	n	19.6	ם	19.6	n	19.6	ח	19.6	)
	ARSENIC	4.27		3.69		3.76		2.97		3.6	,	3.75	;
	BARIUM	99.3		51.8		53.1		75.2		49.7		42.4	
	BERYLLIUM	0.427	Þ	0.427	Ω	0.427	n	0.427	ח	0.427	D	0.427	ם
	CADMIUM	1.2	Ω	1.2	Ω	1.2	n	1.2	n	1.2	ם	1.2	
	CALCIUM	22000		38200		34700		2230		7540		22800	ı
	CHROMIUM	9.2		2.07		5.24		7.19		6.09		7.2	
	COBALT	3.37		2.5	Ω	3.11		4.02		2.5	n	3.14	
	COPPER	17.3		2.84	n	3.68		6.2		4.4		21.1	
	IRON	9530		5970		6110		10500		6450		26400	
	LEAD	7.82		7.44	n	7.44	Ω	7.44	Ω	8.35		7.44	ם
	MAGNESIUM	4180		3830		3650		2710		1560		1400	
	MANGANESE	227		27.9	n	27.9	Ω	225		143		189	
	MERCURY	0.05	ב	0.05	Þ	0.02	n	0.05	Ω	0.05	n	0.05	ח
	NICKEL	6.9		4.61		4.95		6.71		4.49		6.98	
	POTASSIUM	2080		158	D	158	ם	1770		876		158	כ
	SILVER	0.803	Þ	0.803	n	0.803	Þ	0.803	n	0.803	n	0.803	ם
	SODIUM	215		236		247		148		115		115	
	THALLIUM	34.3	D	34.3	Þ	34.3	n	34.3	Ω	34.3	n	34.3	n
	VANADIUM	15		2.81	n	2.81	n	2.81	Þ	2.81	n	2.81	ר
	ZINC	87.8		3.53	n	3.53	Ω	45.2		23.1		24.1	ı
SEMIVOLATILES	2,4-DINITROTOLUENE	ΥN		Ν		Ϋ́		N		NA		NA	
	BIS (2-ETHYHEXYL) PHTHALATE	Ν		۷×		Ϋ́		Y Y		٧X		٧X	
	N-NITROSO DIPHENYLAMINE	Ϋ́		NA		Ϋ́		NA		ΥN		٧Z	

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

## Subsurface Soil (continued)

Group	Analytes	10 ft	2	2 ft	2 ft	5 R	4-12C	OBP-94-12D 7 R	4-12D	CBP-5	OBP-94-12E 10 ft
ANIONS	FLUORIDE	٧X		Ϋ́		٧X		X		Z	
	NITRATE	۲×		Ϋ́		٧Z		X		Ž	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	n	0.922	5	0.922	n	0.922	fi	0.922	111
	2,4-DINITROTOLUENE	2.5	Ω	2.5	Ω	2.5	n	2.5	5 0	2.5	3 =
	2,4,6-TRINITROTOLUENE	7	n	7	n	7	n	7	=	,	=
	RDX	1.28	Þ	1.28	Ω	1.28	<b>-</b>	1.28	· =	1 28	=
METALS	ALUMINUM	777	n	7660		16600	•	17200	)	07:1	>
	ANTIMONY	19.6	n	19.6	n	19.6	n	19.6	n	19.6	=
	ARSENIC	5.07		3.57		3.39		3.94	,	2.5	- <b>-</b>
	BARIUM	8.36	n	77.7		165		145		74.7	)
	BERYLLIUM	0.427	n	0.427	n	0.726		0.602		0.427	11
	CADMIUM	1.2	n	1.2	D	1.2	n	1.2	n	1.2	=
	CALCIUM	12900		29200		93000		140000	1	00099	)
	CHROMIUM	5.11		10.5		13.2		15.4		9.77	
	COBALT	2.5	Ω	3.76		5.91		5.54		3.35	
	COPPER	4.77		5.76		7.47		9.64		3.75	
	IRON	6740		9360		14800		15300		7110	
	LEAD	7.44	D	7.44	n	7.44	n	7.44	n	7.44	1
	MAGNESIUM	2060		3630		14100		13600	ļ	6210	)
	MANGANESE	27.9	n	184		182		297		27.9	11
	MERCURY	0.02	n	0.05	D	0.05	ם	0.05	Ω	0.05	<u> </u>
	NICKEL	3.95		6.58		10.9		10.4		4.64	1
	POTASSIUM	158	Þ	1950		4740		4820		1610	
	SILVER	0.803	Þ	0.803	D	0.803	n	0.803	Ω	0.803	Ω
	SODIUM	93		163		2300		2310		692	
	THALLIUM	34.3	Þ	34.3	D	34.3	n	34.3	n	34.3	=
	VANADIUM	2.81	n	16.9		21.7		22.6		2.81	· =
	ZINC	3.53	D	24.6		38.1		35.7		3.53	=
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́N		۷N		NA		Ϋ́		×	)
	BIS (2-ETHYHEXYL) PHTHALATE	Ν		NA		NA		ΥN		ź	
		A I A		:							

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

Subsurface Soil (continued)

Č	•	OBP-95-01B		OBP-95-01C	01C	OBP-95-02B	02B	OBP-95-02C	-02C	OBP-95-02C	-02C	OBP-95-03B
Group	Analytes	2 N		48		5 R		7 R		7 ft (dup)	(dn	1.5 R
DIOXINS	2,3,7,8-TCDD	8.5E-07	-	3E-06	11	2 SE-06		1 85.06	11	4 KF 07	=	20 E0 2
	2.3.7.8-TCDF	1 SE.06	-	35 06	; <u>=</u>	30 25 6		20.20.0	>	0.10.1	>	0.05-00
		20.7	: ;	32-25	3 :	7.7E-03		2.2E-U0		4.2E-0/		9.9E-05
	1,2,3,7,8-PeCDD	4.3E-06	.: -:	.2E-06	<b>-</b>	1.4E-05		1.0E-05		9.1E-07	n	2.0E-05
	1,2,3,7,8-PeCDF	3.9E-07	9.6	.0E-07	n	7.1E-06		7.0E-07	ב	4.2E-07	Ω	1.9E-05
	2,3,4,7,8-PeCDF	5.0E-07	3.6	8E-07	S	1.1E-05		1.1E-06	ח	4.6E-07	=	2 RE-05
	1,2,3,4,7,8-HxCDD	4.0E-06	=	.1E-06	n	1.4E-05		8.5E-06	· =	1.3E-06	· =	1 4F-05
	1,2,3,6,7,8-HxCDD	1.3E-05	 	5E-07	ם	2.8E-05		1.7E-05	)	4 SE-07	)	\$ 3E-05
	1,2,3,7,8,9-HxCDD	1.6E-05	6	SE-07	Þ	5.2E-05		3.2E-05		1 2E-06	=	6 8E 05
	1,2,3,4,7,8-HxCDF	1.1E-06	9	SE-07	n	2.2E-05		2.3E-06		5 1E-07	) <b>=</b>	4 OF OS
	1,2,3,6,7,8-HxCDF	5.5E-07	5.5	8E-07	n	8.9E-06		7.6E-07		4 7E-07	=	1.65-05
	1,2,3,7,8,9-HxCDF	3.0E-07 U	1.6	1E-07	Ω	3.2E-06	Ω	4.8E-07	Ω	7.4E-07	=	5 8E-06
	2,3,4,6,7,8-HxCDF	1.1E-06	7.(	7.0E-07	Ω	1.4E-05		1.6E-06	)	3.1E-07	)	2.4E-05
	1,2,3,4,6,7,8-HpCDD	2.4E-04	3.	1E-06	Ω	3.5E-04		1.9E-04		4.6E-06		5.5E-04
	1,2,3,4,6,7,8-HpCDF	9.7E-06	7.	.SE-06	n	3.7E-05		7.6E-06		1.3E-06	Ω	9.7E-05
	1,2,3,4,7,8,9-HpCDF	1.0E-06 U	1 8.	6E-07	n	5.0E-06		1.2E-06	Ω	3.1E-07	- =	6.0E-06
	OCTACHLORODIBENZODIOXIN	7.7E-04	9.9	.0E-06	n	7.1E-04		3.7E-04	ı	1.2E-05	)	1 4E-03
	OCTACHLORODIBENZOFURAN	1.3E-05	5.(	.6E-06	Ω	3.3E-05		1.4E-05		5.9E-06	n	6.5E-05
E	TOTAL 2,3,7,8-TCDD EQUIVALENTS 1.0E-05	rs 1.0E-05	9.6	9.5E-08	U	3.7E-05		1.4E-05		1.8E-07		7.1E-05

Summary of Analytes Detected in Soil for the Old Burn Area (SWMU 6)

## Subsurface Soil (continued)

OBP-95-04C	ח		n n	n a	n	n .	n n	n .	n n	n l	n.	n .		n :	. n				
OBP-9	7.9E-07	4.5E-07	6.8E-07	3.0E-07	3.3E-07	3.8E-07	3.1E-07	3.4E-07	3.1E-07	2.8E-07	4:3E-07	3.4E-07	2.1E-06	1.0E-06	3.9E-07	9.3E-06	3.3E-06	7.9E-08	
-04B	Ω					Ω	n			n	n	n			n				
OBP-95-04B	2.2E-07	4.8E-06	1.5E-06	1.4E-06	2.2E-06	1.2E-06	2.8E-06	3.6E-06	5.0E-06	2.3E-06	$6.7\dot{E}-07$	2.3E-06	3.8E-05	1.3E-05	1.9E-06	1.6E-04	1.7E-05	4.0E-06	
03C	Ω		Ω			n			n	ח				ລ	n		n		
OBP-95-03C 4 ft	1.0E-06	2.0E-06	8.0E-07	3.6E-07	4.4E-07	5.8E-07	1.4E-06	1.8E-06	6.4E-07	5.2E-07	1.9E-07	4.8E-07	1.5E-05	2.4E-06	7.5E-07	4.2E-05	5.9E-06	S 1.0E-06	
Analytes	2,3,7,8-TCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDD	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCTACHLORODIBENZODIOXIN	OCTACHLORODIBENZOFURAN	TOTAL 2,3,7,8-TCDD EQUIVALENTS 1,0E-06	
Group	DIOXINS																		All values are in µg/g (equal to ppm)  NA = Not analyzed  U = Not detected; value is the Certif  Dup = Duplicate analysis  J = Value is estimated  GT = Greater than.  TCDD = Tetrachlorodibenzo-p-diox

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Firing Point Area - Surface Soil

		CRS-92-101	11	CRS-92-201	201	CRS-92-301	101	CRP-94-15A	15A	CRS-94-17	CRS	CRS-94-18
Group	Analytes	0 U		0 11		0 ft		0.5 ft		0.5 ft	0	0.5 ft
METALS	ALUMINUM	NA		N A		X		12.700		19,700	23.20	_
	ARSENIC	72	Ω	240	n	48	ם	3.25		\$ 0.8	2,72	5
	BARIUM	130		140		130	)	93.6		143	7.7.C	
	BERYLLIUM	0.078	Ω	0.078	n	0.078	ם	0.556		0.539	141	
	CALCIUM	NA		NA A		NA		19,600		13.100	25.51	
	CHROMIUM	9.91		17.6		4		13.9		22.7	A 2C	
	COBALT	AN		NA		NA		3.51		6.84	40.5	
	COPPER	9.75		8.4		. 8.48		7.35		22.1	14.2	
	IRON	17,000		19,000		19,000		13,600		17,300	19.60	_
	LEAD	8.4		11		7		7.44	n	31.2	11.7	
	MAGNESIUM	Ν		NA A		NA		5,970		7,780	8.780	_
	MANGANESE	٧X		AN		¥		25.9	n	480	455	
	NICKEL	2.46	n	2.46	n	2.46	n	11.5	-	11.4	13.2	
	POTASSIUM	ΥN		NA		N A		2,060		5.670	6.450	
	SILVER	0.0692		0.0524		0.0497		0.803	n	0.803	0,430	=
	SODIUM	Ϋ́		N.		NA		3.850	ı	358	331	•
	VANADIUM	Y.		NA		AN		21.5		26.6	29.7	
	ZINC	2		45		45		28.2		61.5	56.2	
SEMIVOLATILES	BUTYLBENZYL PHTHALATE		n	0.33	m	0.292		~	=	8 -	-	Ξ

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Firing Point Area - Subsurface Soil

		CRT-92-101	101	CRT-92-102	-105	CRT-92-103	-103	CRT-92-104	-104	CRT-92-201	-201	CRT-92-202	2-202
Group	Analytes	2.5 ft		SR		7.5 ft		10 ft		2.5 ft		5 17	2
METALS	ALUMINUM	Š		Z		2		Ž		7		;	
	ARSENIC	240	=	72	Ξ	240	Ξ	2 2	-	¥ 5	:	Y Y	;
	· · · · · · · · · · · · · · · · · · ·	2 6	•	1	>	04.7	>	<del>4</del> 7	>	740	_	72	)
	BARIOM	130		140		110		45		198		130	
	BERYLLIUM	0.078	n	0.078	ב	0.078	n	0.078	n	0.078	ב	0.078	
	CADMIUM	0.424	ם	0.424	n	0.424	ב	0.424	n	0.424	ב	0.424	=
	CALCIUM	A		N A		NA		NA		N V	ı	×	
	CHROMIUM	15.1		17.5		12.6		5.41		18.3		14.0	
	COBALT	Ν		NA		N		X		Y Z		Ž	
	COPPER	6.62		16.3		7.32		6.26		7.63		6 05	
	IRON	16,000		22,000		15,000		8,200		21,000		16.000	
	LEAD	14		31		9.4		4.9		=		8.7	
	MAGNESIUM	Y Y		N		NA		AN		X		Ž	
	MANGANESE	Ϋ́		Y Y		AN		Ϋ́		X		2	
	NICKEL	2.46	n	2.46	Ω	2.46	ם	2.46		2.46	=	2 46	Ξ
	POTASSIUM	ΑN		N		NA		¥	)	Z	)	0. 4Z	
	SILVER	0.0461		0.0389		0.0277		0.0166		0.0484		0.0231	
	SODIUM	Ν		NA		NA		Ϋ́		X		X	
	VANADIUM	N A		NA		AN		NA		N A		Z	
	ZINC	37		800	-	110		<u></u>		46		<b>3</b>	
SEMIVOLATILES	BENZYL ALCOHOL	0.33	Ð	0.33	5	0.33	n	0.33	Ω	0.33	Ш	0 33	Ξ
	BIS (2-ETHYHEXYL) PHTHALATE	0.39	ח	0.39	Ω	0.39	D	0.39	n	0.39	; ⊃	0.339	
	BUTYLBENZYL PHTHALATE	0.33	Ω	0.33	5	0.33	S	0.33	'n	0.33	'n	0.665	
	DI-N-BUTYL PHTHALATE	0.33	5	0.33	n	0.33	n	0.33	ſΩ	0.33	n	0.33	m
	HEXACHLOROBENZENE	0.26	n	90 0		90 0	11	70.0	:	,,,			

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Firing Point Area - Subsurface Soil (continued)

Group			3	FO7-76-1 UC	107	CRT-92-301	-301	CRT-92-302	-302	CRT-92-303	-303	CRT-92.304	2-304
ETALS	Analytes	7.5 ft		10 R		2.5 ft		5 ft		7.5 ft	_	10 ft	
	ALUMINUM	A		X		Ž		2		Ž		1	
	ARSENIC	2	Ξ	2	-	. 9	=	5 2	:	¥2.	;	Z	
		2 ;	>	<b>5</b> 7	>	40	>	<b>5</b> 7	)	24	<b>-</b>	24	⊃
	BARIUM	120		45		120		130		120		110	
	BERYLLIUM	0.078	ח	0.078	n	0.078	Ω	0.078	n	0.078	=	0.078	Ξ
	CADMIUM	0.424	n	0.424	n	0.454	D	0.424	n	0.424	) <b>=</b>	0.474	=
	CALCIUM	NA		NA		NA		N A		Z	)	NA N	)
	CHROMIUM	14.3		3.9	ח	12.9		13.1		1 21		1 0	
	COBALT	Ϋ́		NA		AN		Z		Y Z		}	
	COPPER	6.11		2.44		5.92		7.11		6.33		68.9	
	IRON	15,000		4,900		16,000		24,000		15.000		16 000	
	LEAD	8.9		4.8		12		. =		0.7		1000	
	MAGNESIUM	N A		Y'A		Y.		Y Y		Z		2 2	
	MANGANESE	N		NA		AN		Z		¥ 2		Y N	
	NICKEL	2.46	n	2.46	Ω	2.46	=	2 46	=	746	Ξ	אין ל	5
	POTASSIUM	N A		NA	ı	×	)	2 Z	)	04.7 VIV	>	7.40 VIA	)
	SILVER	0.0284		0.0166		0.0289		0.0277		0.0305		AN 0	
	SODIUM	NA		NA		N A		NA		AN		NAN	
	VANADIUM	NA		AN		AN		AN		Z		. ×	
	ZINC	37		10.9		34		42		33		30	
SEMIVOLATILES	BENZYL ALCOHOL	0.33	'n	0.33	í	0.33	m	0 33	Ξ	33		75.0	Ξ
	BIS (2-ETHYHEXYL) PHTHALATE	0.39	Ω	0.39	ם	0.39	'n	0.39	; n	0.39	3 =	0.30	3 =
	BUTYLBENZYL PHTHALATE	0.33	S	0.33	n	0.33	5	0.33	5	0.33	) <u>[</u>	0.33	2
	DI-N-BUTYL PHTHALATE	0.33	ī	0.33	n	0.33	n	0.33	'n	0.33	'n	0.33	3 =
	HEXACHLOROBENZENE	0.26	n	0.26	ח	0.26	ח	0.26	D.	0.26	=	0.26	3 =

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Firing Point Area - Subsurface Soil (continued)

Grain	Amelica	CRP-94-01A	-01A	CRP-94-01B	0113	CRP-94-01C	01C	CRP-94-01D	01D	CRP-94-02A	02A	CRP-94-02B	1-02B
dnois	Analytes	Sft		7 ft		9 ft		10 ft		5 ft		7.6	
METAIC													
MEIALS	ALUMINUM	17,600		10,800		12.700		4 630		17 900			
	ARSENIC	29.5		77 P		2011		1,000		008,71		006,51	_
	BARITIM			·		5.83		3.58		17.5		5.02	
		139		89.4		126		46.6		123			
	BERTLLIUM	0.842		0.562		0.657		0.427	Ξ	102.0		111	
	CADMIUM	1.2	=	1.2	=	2.63		171.5	<b>;</b>	0.70		0.73	
	CALCIUM	20 60	)	7.1	>	7.03		1.2	)	9.48		1.2	ב
	CHEOMITM	WC, KC		19,800		25,200		14,500		23,600		27.200	
	COBALT	17.0		11.4		18.8		5.66		19.2		16.5	
	COBALI	8.05		5.17		6.39		3.06		7.50		200	
	COPPER	10.1		12.2		28.8		3 2		2C.1		0.0	
	IRON	101				70.0		32.1		99.6		7.7	
	1540	70,100		13,200		22,300		10,200		25,100		15.200	
		7.44	<b>-</b>	7.44	n	48.5		7.44	n	19.6		7 44	Ξ
	MAGNESIUM	7,280		5,390		5,470		2.300		6 740		, v	
	MANGANESE	381		287		326		27.9	=	748		024,0	
	NICKEL	13.3		9 35		110			)	0		35/	
	POTASSIUM	4 260		(5)		6.11		4.96		15.5		11.3	
	SILVER	200	-	000,2	;	7,860		1,080		4,370		3,290	
	Mildos	0.00	>	0.803	>	0.803	Þ	0.803	ם	0.803	n	0.803	Ξ
	VANABILIA	333		300		291		195		249		488	
	ZINC	29.9		19.1		20.7		2.81	Ω	26.2		24	
SEMINOI ATH BE	DENIZY ALCOHOL	47.7		218		1,040		697		12.000		517	
CTUIL OF WILLIES		0.032	<b>-</b>	0.032	n	0.032	n	0.032	n	0.032	=	200	
	BIS (2-ETHYHEXYL) PHTHALATE	0.48	D	0.48	n	0.48	=	0 48	=	2000		5 5	;
	BUTYLBENZYL PHTHALATE	8:	Ω	8	=	-	) =	5 -	<b>:</b>	0.48	<b>)</b>	0.48	D
	DI-N-BUTYL PHTHALATE	-	=		) =	9 .	<b>)</b> ;	0.	<b>&gt;</b> ;	8.	)	1.8	ב
	HEXACHLOROBENZENE	80 0	) =	2	<b>)</b> :	C.1	<b>)</b>	I.3	<b>-</b>	5.6		1.3	ם
		0.00		0.08	5	0.08	_	0.08	ם	0.34		800	-

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Firing Point Area - Subsurface Soil (continued)

		CRP-94-02C	02C	CRP-94-02D	02D	CRP-94-03A	03A	CRP-94-03B	03B	CRP-94-03C	03C	CRP-94-03D	OF O
Group	Analytes	9 ft		10 ព		5 ft		7 ft		11 6	)	10 ft	1
METALS	ALUMINUM	13,500		20,100		16,200		17.000		9.420		17 100	
	ARSENIC	4.29		6.2		6.1		6.07		3.92		5.14	
	BARIUM	103		148		119		135		86.2		138	
	BERYLLIUM	0.736		1.02		0.742		0.427	n,	0.427	=	0.736	
	CADMIUM	1.2	n	1.2	ם	1.2	ם	1.2	מ	1.2	) <b>–</b>	1.2	
	CALCIUM	27,500		27,900		32,200		25,300		19,300	,	18.300	)
	CHROMIUM	14		20.7		15.8		15.8		10.7		16.9	
	COBALT	90.9		8.56		7.26		6.93		5.18		38 9	
	COPPER	11.5		42.5		9.7		8.73		4.28		6	
	IRON	12,900		24,200		15,800		15,100		009.6		16 200	
	LEAD	7.44	n	12.5		7.44	n	7.44	n	7.44	=	7 44	=
	MAGNESIUM	5,070		7,390		7,210		6,270		4.220	)	026 9	<b>,</b>
	MANGANESE	289		413		364		332		288		360	
	NICKEL	10.9		15.2		12.2		11.5		7.91		= = =	
	POTASSIUM	2,690		4,480		3,830		3,810		2.070		3.870	
	SILVER	0.803	Ω	0.803	n	0.803	Ω	0.803	n	0.803	<b>-</b>	0.803	=
	SODIUM	202		312		1,030		2,070		966	,	1.900	)
	VANADIUM	21.5		29.6		23.9		25.1		16.2		25.2	
	ZINC	178		2500		43.8		39.7		27.9		46.4	
SEMIVOLATILES	BENZYL ALCOHOL	0.032	n	0.032	Ω	0.061		0.043		0.032	n	0.079	
	BIS (2-ETHYHEXYL) PHTHALATE	0.48	Ω	0.48	ם	0.48	n	0.48	ם	0.48	n	0.48	D
	BUTYLBENZYL PHTHALATE	1.8	n	1.8	ם י								
	DI-N-BUTYL PHTHALATE	1.3	n	1.3	n	1.3	D	1.3	n	1.3	n	1.3	n
	HEXACHLOROBENZENE	0.08	n	0.08	n	0.08	Ω	0.08	n	0.08	ח	0.08	n

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Firing Point Area - Subsurface Soil (continued)

•		CRP-94-04A	-04A	CRP-94-04B	-04B	CRP-94-04C	.04C	CRP-94-04D	04D	CRP-94-05A	05A	CRP-04-05R	4.05R
Group	Analytes	5 ft		7 ft		9 18		10 ft		4 ft		5 fr	
METALS	ALUMINUM	17,300		12,300		10,600		7.410		16 700		16.200	
	ARSENIC	4 55		5 22		70.7		200		20,01		10,200	
	DADITION	5		5.43		4.20		3.86		5.53		5.57	
	BAKIOM	149		83.9		83.3		64.7		152		136	
	BERYLLIUM	0.761		0.613		0.427	ב	0.521		0.848		0.739	
	CADMIUM	1.81		1.2	n	1.2	n	1.2	n	216		12.0	
	CALCIUM	35,100		24,800		16,300		14.100	1	45.100		38 000	
	CHROMIUM	16.5		13.4		11.2		7.92		16.5		15.5	
	COBALT	6.78		5.35		4 75		2 53		6.50			
	COPPER	108		72.3				40.C		0.00		77.1	
	NO GI	17:0		7.7		4.91		10.7		13		Ξ	
	IRON	15,900		12,500		10,900		8,390		16,100		15.700	
	LEAD	7.44	ם	7.44	ם	7.44	Ω	7.44	ח	7.44	=	7 44	-
	MAGNESIUM	6,570		4,900		4,430		3,210		6.730	,	6 640	
	MANGANESE	364		296		249		189		208		430	
	NICKEL	12.3		10.3		7.53		6.32		8 91		0 61	
	POŢASSIUM	4,600		2.730		2.240		1 730		5.5		13.0	
	SILVER	0.803	n	0.803	Ω	0.803	1	080		067,4	=	4,180	:
	SODIUM	287		293		493	,	252	•	263	>	0.803	)
	VANADIUM	24.7		23		17		2.81	Ξ	25.5		900	
	ZINC	356		47		35.1		231	)	200		2.4.3	
SEMIVOLATILES	BENZYL ALCOHOL	0.067		0.062		0.051		0.065		0,000		30.0	
	BIS (2-ETHYHEXYL) PHTHALATE	0.48	ח	0.48	n	0.48	n	0.48	=	0.48	=	70.0	:
	BUTYLBENZYL PHTHALATE	1.8	ח	1.8	ם	1.8	D	1.8	ח	 	) <b>=</b>	ç ∝ -	<b>&gt;</b> =
	DI-N-BUTYL PHTHALATE	1.3	ם	1.3	n	1.3	Ω	1.3	Ω	1.3	n	1.3	) =
	HEXACHLOROBENZENE	0.08	<b>-</b>	0.08	n	0.08	<b>n</b>	0.08	-	000	;		) :

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Firing Point Area - Subsurface Soil (continued)

		CRP-94-05C	)SC	CRP-94-05D	05D	CRP-94-15B	15B	CRP-94-15C	15C	
Group	Analytes	7 ft		10 ft		Sft		10 ft		
METALS	ALUMINUM	16,200		14,400		14,500		7,970		
	ARSENIC	5.05		4.5		4.94		4.1		
	BARIUM	125		116		86.2		72.9		
	BERYLLIUM	0.785		0.77		0.604		0.427	n	
	CADMIUM	1.2	n	1.2	n	1.2	n	1.2		
	CALCIUM	30,000		20,100		38,700	ı	37.500	•	
	CHROMIUM	16.1		14.6		13		7.58	•	
	COBALT	5.98		6.25		5.42		3.37		
	COPPER	11.4		8.66		8.53		5.61		
	IRON	16,000		14,800		13,500		8.550		
	LEAD	7.44	n	7.44	n	7.44	n	7.44	Ω	
	MAGNESIUM	6,220		5,730		6,240		4,220	•	
	MANGANESE	359		362		286		145		
	NICKEL	12.2		11.7		10.7	_	5.55	-	
	POTASSIUM	3,690		3,070		3,440		1.990		
	SILVER	0.803	Ω	0.803	n	0.803	ם	0.803	n	
	SODIUM	385		394		1,790		918		
	VANADIUM	25		22.1		20.7		13.6		
	ZINC	186		47.4		30		21.2		
SEMIVOLATILES	BENZYL ALCOHOL	0.032	ח	0.032	n	0.032	ח	0.032	D	
	BIS (2-ETHYHEXYL) PHTHALATE	0.48	n	0.48	n	0.48	n	0.48	n	
	BUTYLBENZYL PHTHALATE	1.8	n	1.8	Ω	1.8	ם	1.8	n	
	DI-N-BUTYL PHTHALATE	1.3	n	1.3	n	3.2	ח	3.2	Ω	
	HEXACHLOROBENZENE	0.08	n	0.08	n	0.08	n	0.08	n	

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Bullet Stop - Surface Soil

i		CRP-94-13A	CRP-94-14A	14A	CRS-94-04	CRS-94-05	CRS-94-06	CRS-94-07	5
Group	Analytes	0.5 ft	0.5 ft		0.5 น	0.5 ft	0.5 ก	0.5 ft	_
METALS	ALUMINUM	18,100	819	n	22,100	22.600	18.500	17 600	
	ARSENIC	5.42	8.64		5.64	6.24	5.42	5.05	
	BARIUM	136	8.76	ם	194	201	172	147	
	BERYLLIUM	0.737	0.427	n	0.65	0.617	0.427 U	0.427	=
	CALCIUM	36,300	34,900		6,290	20,400	20.200	21.400	)
	CHROMIUM	17.7	3.49		24.6	24.1	20.2	20.6	
	COBALT	2.67	2.5	n	8.12	7.02	5.68	5.57	
	COPPER	14.1	2.84	ם	26.3	20.7	20.6	16.2	
	IRON	17,600	1,360	Ω	22,300	20,000	16.600	16.700	
	LEAD	12.8	7.44	Ω	29.8	19.3	24.4	136	
	MAGNESIUM	9,740	2,150		9,140	10,900	9,130	7.650	
	MANGANESE	375	25.9	n	632	615	520	004	
	NICKEL	14 J	3.63	-	13.2	11.1	10.1	9.87	
	POTASSIUM	5,700	218	ח	6,450	6,920	5.860	5.280	
	SODIUM	27.7	126		574	528	518	421	
	THALLIUM	40.2	34.3	n	34.3 U	34.3 U	34.3 U	34.3	=
	VANADIUM	22.3	2.41	n	32.3	30.4	26	26.2	)
	ZINC	50.2	38.7		71.2	86.5	1 03		

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Bullet Stop - Surface Soil (continued)

		CRS-94-08	CRS-94-09		CRS-94-10	CRS-94-11	11	CRS-94-12		CRS-94-13
Group	Analytes	0.5 ก	0.5 ft	0.7	0.5 ft	0.5 ft		0.5 ก		0.5 ft
METALS	ALUMINUM	16.100	10.500	13 80	9	W1 21		901.51	•	007
	C114004			30.44	2	31,51		10,100	7	3,5
	AKSENIC	6.02	4.18	3.95	100	4.34		5.39		8.8
	BARIUM	141	99.5	98.5	,,	124		124		150
	BERYLLIUM		U 0.427 I	U 0.42	7 U	0.427	ם	0.427	_	640
	CALCIUM	19,400	16,200	10,70	Q	9,520			4	4 300
	CHROMIUM	17.71	11.8	13.5	•	17.3		19.4	•	36
	COBALT	2.66	4.32	4.61		5.15		5.42	-	2 2
	COPPER	19.5	22.1	14		17		19.9		14.8
	IRON	16,500	11,100	12,70	9	15.600		15.900	=	0.400
	LEAD	298	164	19.2		21.6		24.8	•	7,165
	MAGNESIUM	6,190	4.180	5.54		7 370		7 880	Ç	7.71
	MANGANESE	369	237	288		360		377	in.	000,
	NICKEL	8.6	7.1	6.9		9.74		5.0		914.7
	POTASSIUM	4,640	2,730	3.070		4.340		4 420		545
	SODIUM	385	374	424		444		433	9	373
	THALLIUM	34.3		U 34.3	n	34.3	n	34.3	ν.	177
	VANADIUM	24.6	15.8	18		21.5		23.5	- 😯	30.2
	ZINC	49.5	34.5	39.4		50.4		52.2		¥

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Bullet Stop - Surface Soil (continued)

Group	Analytes ALUMINUM ARSENIC BARIUM BERYLLIUM CALCIUM	CRS-94-14 0.5 ft 19,200 5.23 140 0.582 32,900	CRS-94-15 0.5 ft 21,000 4.59 173 0.562 27,400	CRS-94-16 0.5 ft 21,400 4.54 190 0.695 26,000
	CHROMIUM	22.9	25.4	23.7
	COPPER	17.1	20.4	17.6
	IRON LEAD	18,000 15.9	19,300 24.4	20,000
	MAGNESIUM	9,580	11,200	11,700
	MANGANESE	444	502	602
	NICKEL	13.3	11.9	13.8
	POTASSIUM	5,530	009'9	96,9
	SODIUM	427	573	614
	THALLIUM	34.3 U	34.3	J 34.3
	VANADIUM	25.6	30.1	27.3
	ZINC	56.5	61.7	61.4

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Bullet Stop - Subsurface Soil

B CRP-94-14C 10 ft	17.6	U 1.2 U	8,420	1.66	U 2.84 U	U 1,360 U	1,200	J 2.74 U	302	
CRP-94-14B 5 ft	5.2		20,900	2.57	2.84	1,360	2,010	3.67	74.6	
CRP-94-13C 10 ft	3.5	1.56	4,200	3.76	7	1,360 U	172 U	3.83 J	64.6	
CRP-94-13B 5 ft	3.96	1.2 U	13,500	4.77	3.99	6,850	1,670	4.19 J	102	•
Analytes	ARSENIC	CADMIUM	CALCIUM	CHROMIUM	COPPER	IRON	MAGNESIUM	NICKEL	SODIUM	21110
Group	METALS									

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

## Northwest Trench - Surface Soil

	٠	F00-46-1110	CRP-94-07A	CRP-94-08A	CRP-94-09A	CRP-94-09A	CRP-04-10A	1104
Crond	Analytes	0.5 ft	0.5 ft	0.5 ก	0.5 ft	0.5 ft (dup)	0.5 ft	
METALS	ALUMINUM	23,700	26.300	30 800	33,600	202		
	ARSENIC	č		200,00	23,000	26,500	24,600	
		17.7	1	5.62	5.71	2.5	90.99	
	BARIUM	220	289	412	212	250	60.0	
	BERYLLIUM		1 17		110	/C7	177	
	CADMIIM				0.945	1.1	1.05	
	74101110	1.2 0	1.2	1.2 U	1.2 U	1.2 U	1.2	Ξ
	CALCIUM	47,400	46,300	49,500	34,800	47.800	35 700	)
	CHROMIUM	23.2	23.3	34.3	1 66	22.0	2016	
	COBALT	6.53	8 22	11.3		0.22	4.77	
	COPPER	30.8	716	7.77	70.7	8.49	7.6	
	NOai	0.07	0.12	70.0	26.4	21.5	21	
	NON	23,200	25,600	35,000	21.400	24 800	24 200	
	LEAD	22.5	20.2	25.5	36.3	000	24,500	
	MAGNESIUM	14 600	16.300	00010	5.00	19.7	21	
	MANGANECE	200	10,500	21,300	13,800	16,000	15,500	
	Menoritor	289	049	732	637	611	646	
	MERCOKI	0.05 U	0.05 U	0.05 U	0.05 U	0.05	0.05	=
	NICKEL	16.5 J	18.3 J	24.2 J	15.8	17.0	0.07	٠ -
	POTASSIUM	9,250	10,700	15.700	0 300	3:1:1	10.7	-
	SODIUM	657	731	190	0051	10,500	11,189	
	THALLIUM	111 6 76	1 0 30	,	08/	912	1,240	
	VANADITM		10.00	34.3 UJ	38.2 J	34.3 UJ	34.3	n
	Moldania	8.72	27.4	39.9	27.8	28	26	
CEMIVOI ATH DO	DENIZOT AT COLLOS	73	78.4	6.66	70	72.2	73.4	
CHUIL OF LIFES	DENZIL ALCOHOL	0.032 U	0.032 U	0.032 U	0.052	0.032	0.032	-

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Northwest Trench - Surface Soil (Continued)

		CRP-94-11A	(1 <b>Y</b>	CRP-94-12A	12A	CRS-94-01	1(	CRS-94-02	02	CRS-94-03	03	
Group	Analytes	0.5 ก		0.5 ก		0.5 ft		0.5 ft		0.5 ก		
METALS	ALUMINUM	819	מ	819	Ω	12600		23100		13600		
	ARSENIC	2.5	ם	9.49		4.79		7.09		4.95		
	BARIUM	8.76	n	8.76	n	107		189		130		
	BERYLLIUM	0.427	n	0.427	ח	0.631		1.15		0.427	=	
	CADMIUM	1.2	Ω	4.94		1.2	Ω	1.2	Ω	1.2	· =	
	CALCIUM	100,000		4,900		7,030		29,700		10.400	)	
	CHROMIUM	1.28		5.41		15		25.1		14.5		
	COBALT	2.5	n	5.66		5.23		8.45		2.56		
	COPPER	4.03		10.1		15.3		20.8		21.5		
	IRON	1,360	Ω	1,360	ח	14,700		21,700		15.100		
	LEAD	7.44	n	10.8		16.6		19.7		30.4		
	MAGNESIUM	106		172	n	5,100		12,200		086.9		
	MANGANESE	25.9	ם	25.9	Ω	318		514		382		
	MERCURY	0.02	ח	0.0897		0.0534		0.05		0.05	-	
	NICKEL	4.53	-	5.81	_	8.99		15	)	8 96	•	
	POTASSIUM	218	D	218	n	3.370		7.220		3 860		
	SODIUM	9.99		75.6		326		501		514		
	THALLIUM	34.3	n	37.3	ſ	34.3	n	34.3	n	34.3	ח	
	VANADIUM	2.41	n	2.41	n	19		31.2		19.1	l	
	ZINC	11.1		811		43.1		8.79		49.4		
SEMIVOLATILES	BENZYL ALCOHOL	0.032	Ω	0.032	ח	0.032	n	0.032	Ω	0.032	ח	

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Northwest Trench - Subsurface Soil

42,400 11,200 11.6 2.5 265 78.4 1.77 0.541 38,300 4,000 37.9 12.9 11.1 5.44 24.2 7.87 36,500 13,100 21.9 10.7 13,700 3,250 U 545 250 U 545 11.7 U 10,600 1,880 6,800 2,750 U 48.5 16.2 U 48.5 16.2	Group	Analytes	CRP-94-06B 5 ft	CRP-94-06C 10 ft	CRP-94-07B	CRP-94-07C	CRP-94-08B	CRP-94-08C	ည္က
ALUMINUM         40,100         6,110         42,400         11,200           ARSENIC         11.3         5.11         11.6         2.5         U           BARIUM         245         60         265         78.4         18.4           CALCIUM         1.79         0.604         1.77         0.541         12.9         0.541           CALCIUM         38.3         7.5         37.9         12.9         12.9         12.9           COBALT         9.72         4.21         11.1         5.44         12.9           COPPER         22.4         3.6         24.2         7.87           IRON         35,900         7,000         36,500         13,100           MANGANESIUM         19.7         10.9         21.9         10.7           MANGANESIUM         12,700         4,970         13,700         3,250           MANGANESIUM         5.05         U         545         250           MANGANESIUM         5,440         2,18         U         10,60         1,180           NICKEL         27         J         5.08         J         26.8         J         11.7         J           SODIUM         6,140						1101	3116	10 ft	
ARSENIC         40,100         6,110         42,400         11,200           BARUUM         245         60         265         78.4           BERYLLIUM         1.79         0.664         1.77         0.541           CALCIUM         34,300         85,000         38,300         4,000           COBALT         9.72         4.21         11.1         5.44           COPPER         22.4         3.6         24.2         7.87           IRON         35,900         7,000         36,500         13,100           LEAD         19.7         10.9         24.2         7.87           MAGNESIUM         12.700         4,970         13,700         3,250           MAGNESIUM         12.700         4,970         13,700         3,250           MAGNESIUM         12.700         4,970         13,700         3,250           MAGNESIUM         5,13         25.9         U         6,85         J         11.7         J           NICKEL         27         J         5,08         J         26.8         J         11.7         J           SODIUM         6,140         1,950         6,80         2,750         L         1.750<	METALS	ALUMINIM	40.100	•					
ARSENIC         11.3         5.11         11.6         2.5         U           BARIUM         245         60         265         78.4           BARIUM         1.79         0.604         1.77         0.541           CALCIUM         34,300         85,000         38,300         4,000           CHROMIUM         38.3         7.5         37.9         12.9           COBALT         9.72         4.21         11.1         5.44           COPPER         22.4         3.6         24.2         7.87           IRON         35,900         7,000         36,500         13,100           MAGNESIUM         19,7         10,9         21.9         10,7           MANGANESE         513         25.9         U         545         250           MARCURY         0.05         U         0.119         0.05         U         0.055           NICKEL         27         J         5.68         J         11,7         J           POTASSIUM         9,440         2,19         0.05         U         0.05         U         0.05           VANADIUM         49,4         2,41         U         48.5         11.7         <		A DOUGLAND	40,100	6,110	42,400	11.200	40 100	. 010	:
BARIUM         245         60         265         78.4           BERYLLIUM         1.79         0.604         1.77         0.541           CALCIUM         34,300         85,000         38,300         4,000           CHROMIUM         38.3         7.5         37.9         12.9           COBALT         9.72         4.21         11.1         5.44           COPPER         22.4         3.6         24.2         7.87           IRON         35,900         7,000         36,500         13,100           LEAD         19.7         10.9         21.9         10.7           MAGNESIUM         12,700         4,970         13,700         3,250           MARCURY         0.05         U         0,119         0.055           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         2.18         U         10,500         1,880         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A         A		AKSENIC	11.3	2.11	116	;	00110	019	_
BERYLLIUM         245         60         265         78.4           CALCIUM         1.79         0.604         1.77         0.541           CALCIUM         34,300         85,000         38,300         4,000           CHROMIUM         38.3         7.5         37.9         12.9           COPPER         22.4         3.6         24.2         7.87           COPPER         22.4         3.6         24.2         7.87           IRON         35,900         7,000         36,500         13,100           LEAD         19.7         10.9         21.9         7.87           MAGNESIUM         12,700         4,970         13,700         3.250           MARGNESIUM         25.9         U         545         250           MARGNESIUM         9,440         0.119         0.05         U         0.0595           NICKEL         27         J         5.08         J         26.8         J         11.7         J           SODIUM         6,140         1,950         6,800         2,750         J         49.4         2.41         U         48.5         16.2           VANADIUM         49.4         2.41 <td< td=""><td></td><td>BARIUM</td><td>370</td><td>• (</td><td>0.11</td><td>7.5 0</td><td>9.82</td><td>3.78</td><td></td></td<>		BARIUM	370	• (	0.11	7.5 0	9.82	3.78	
CALCIUM         1.79         0.604         1.77         0.541           CALCIUM         34,300         85,000         38,300         4,000           CHROMIUM         38.3         7.5         37.9         12.9           COBALT         9.72         4.21         11.1         5.44           COPPER         22.4         3.6         24.2         7.87           IRON         35,900         7,000         36,500         13,100           MAGNESIUM         19.7         10.9         21.9         10.7           MANGANESIUM         12,700         4,970         13,700         3,250           MANGANESIUM         25.9         U         545         250           MECURY         0.05         U         0.119         0.05         U         0.05           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         1,950         6,800         2,750         L         2,750           YANADIUM         49.4         2,41         U         48.5         10         2,750           BENZYL ALCOHOL         0.032         U         0.032			C#7	3	265	78.4	230	,,,,	;
CALCIUM         34,300         85,000         38,300         4,000           CHROMIUM         38.3         7.5         37.9         12.9           COBALT         9.72         4,21         11.1         5.44           COPER         22.4         3.6         24.2         7.87           RON         35,900         7,000         36,500         13,100           MAGNESIUM         12,700         4,970         13,700         3,250           MANGANESE         513         25.9         U         545         250           MANGANESE         513         25.9         U         545         250           MANGANESE         513         25.9         U         545         250           MANGANESE         513         25.9         U         60.5         U         0.055           MANGANESE         513         25.9         U         545         250         10.7           MANGANESE         513         U         0.05         U         0.05         U         0.0595           NICKEL         27         J         5.08         J         26.8         J         11.7         J           SODIUM         6,		BEKYLLIUM	1.79	0 604	1 77		677	9.70	_
CHROMIUM         38,300         4,000           COBALT         38,300         4,000           COBALT         9.72         4,21         11.1         5.44           COPPER         22.4         3.6         24.2         7.87           IRON         35,900         7,000         36,500         13,100           LEAD         19.7         10.9         21.9         10.7           MAGNESIUM         12,700         4,970         13,700         3,250           MANGANESE         513         25.9         U         545         250           MANGANESE         513         25.9         U         6,07         10.7         10.7           MANGANESE         513         25.9         U         545         250         10.7           MANGANESE         513         25.9         U         6.68         11.7         1           MANGANESE         513         25.9         U         6.68         1         11.7         1           MARCURY         0.05         U         0.119         0.05         U         0.0558         1         11.7         1           POTASSIUM         5,40         1,950         6,80		CALCIUM	34 300	100.0	1.1/	0.541	1.62	0.765	
CORPLIA         38.3         7.5         37.9         12.9           COBALT         9.72         4.21         11.1         5.44           COPPER         22.4         3.6         24.2         7.87           IRON         35,900         7,000         36,500         13,100           LEAD         19.7         10.9         21.9         13,100           MAGNESIUM         12,700         4,970         13,700         3,250           MARCURY         0.05         U         545         25.0           NICKEL         27         J         5.08         J         25.0           NICKEL         27         J         5.08         J         26.8         J         11.7         J           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         1,950         6,800         2,750           THALLIUM         34.3         U         48.5         16.2           VANADIUM         49.4         2.41         U         48.5         16.2           SINC         85.3         U         6,800         2,750		Cubowing	04,500	82,000	38,300	4,000	40.300	140.000	
COBALT         9.72         4.21         11.1         5.44           COPPER         22.4         3.6         24.2         7.87           IRON         35,900         7,000         36,500         13,100           LEAD         19.7         10.9         21.9         13,100           MAGNESIUM         12,700         4,970         13,700         3,250           MANGANESE         513         25.9         U         545         250           MERCURY         0.05         U         0.119         0.05         U         0.05           NICKEL         27         J         5.08         J         26.8         J         11.7         J           SODIUM         6,140         1,950         6,800         2,750         L         16.2         L         15.2         89.3         16.2		CHACIMICIA	38.3	7.5	37.0	0.01		200,011	
COPPER         22.4         4.21         11.1         5.44           IRON         35,900         7,000         36,500         13,100           LEAD         19.7         10.9         24.2         7.87           MAGNESIUM         12,700         4,970         13,700         3,250           MANGANESE         513         25.9         U         545         250           MANGANESE         513         25.9         U         545         250           MANGANESE         513         25.9         U         545         250           MANGANESE         513         0.05         U         0.05         U         0.05           MERCURY         0.05         U         0.119         0.05         U         0.055           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         1,950         6,800         2,750         1,880         A         10,600         1,880         A         A         15.2         10,400         1,950         6,800         2,750         A         A         A         A         A         A         A		COBALT	.,			12.9	36.2	3.5	
COPPER         22.4         3.6         24.2         7.87           IRON         35,900         7,000         36,500         13,100           LEAD         19.7         10.9         21.9         13,100           MAGNESIUM         12,700         4,970         13,700         3,250           MANGANESE         513         25.9         U         545         250           MARCURY         0.05         U         0.05         U         0.055         U         0.055           NICKEL         27         J         5.08         J         26.8         J         11.7         J           NICKEL         27         J         5.08         J         26.8         J         11.7         J           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         1,950         6,800         2,750           THALLIUM         34.3         UJ         34.3         UJ         34.3         UJ           VANADIUM         49.4         2.41         U         48.5         16.2         L           BENZYL ALCOHOL         0.032			21.6	4.21	11.1	5 44	103		
IRON         35,900         7,000         36,500         13,100           LEAD         19,7         10.9         21.9         13,100           MAGNESIUM         12,700         4,970         13,700         3,250           MANGANESE         513         25.9         U         545         250           MANGANESE         513         25.9         U         545         250           MERCURY         0.05         U         0.119         0.05         U         0.055           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         218         U         10,600         1,880         11.7         J         11.7         J           SODIUM         6,140         1,950         6,800         2,750         1,880         2,750           VANADIUM         49.4         2.41         U         48.5         16.2         1           ZINC         85.1         15.2         89.3         36.9         36.9         1           BENZYL ALCOHOL         0.032         U         0.032         U         0.032         U         0.032 <t< td=""><td></td><td>COPPER</td><td>22.4</td><td>76</td><td></td><td></td><td>10.3</td><td>5.13</td><td></td></t<>		COPPER	22.4	76			10.3	5.13	
LEAD         19.7         10.9         36,500         13,100           MAGNESIUM         12,700         4,970         13,700         3,250           MANGANESE         513         25.9         U         545         250           MANGANESE         513         25.9         U         545         250           MANGANESE         513         25.9         U         545         250           MERCURY         0.05         U         0.119         0.05         U         0.055           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         218         U         10,600         1,880         2,750           SODIUM         6,140         1,950         6,800         2,750         1,880           VANADIUM         49.4         2.41         U         48.5         16.2           ZINC         85.1         15.2         89.3         36.9           BENZYL ALCOHOL         0.032         U         0.032         U         0.032         U		MOdi	1.00	0.0	24.2	7.87	23.2	110	
LEAD         19.7         10.9         21.9         15.100           MAGNESIUM         12,700         4,970         13,700         3,250           MANGANESE         513         25.9         U         545         25.0           MERCURY         0.05         U         0.119         0.05         U         0.0555           NICKEL         27         J         5.08         J         26.8         J         111.7         J           POTASSIUM         9,440         218         U         10,600         1,880         1,880         11.7         J           SODIUM         6,140         1,950         6,800         2,750         1,880         2,750           THALLIUM         34.3         UJ         34.3         UJ         34.3         UJ         34.3         UJ           VANADIUM         49.4         2.41         U         48.5         16.2         16.2           ZINC         85.1         15.2         89.3         36.9         36.9           BENZYL ALCOHOL         0.032         U         0.032         U         0.032         U         0.032         U		INOIN	35,900	2,000	36 500	201 61		11.7	
MAGNESIUM         12,700         4,970         10.7         10.7           MANGANESE         513         25.9         U         545         250           MANGANESE         513         25.9         U         545         250           MERCURY         0.05         U         0.05         U         0.0595           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         218         U         10,600         1,880         1,880         1,880         1,880         1,880         1,880         1,880         1,880         1,880         2,750         1,880         2,750         1,880         2,750         1,880         2,750		LEAD	10.7		OC. C	2,100	34,600	1,360 U	ב
MANGANESE         12,700         4,970         13,700         3,250           MANGANESE         513         25.9         U         545         250           MERCURY         0.05         U         0.119         0.05         U         0.0595           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         218         U         10,600         1,880         1,880           SODIUM         6,140         1,950         6,800         2,750           THALLIUM         34.3         UJ         34.3         UJ         34.3         UJ           VANADIUM         49.4         2.41         U         48.5         16.2           ZINC         85.1         15.2         89.3         36.9           BENZYL ALCOHOL         0.032         U         0.032         U         0.032         U		MACNEGINA	13:1	10.9	21.9	10.7	16.1	7 44	_
MANGANESE         513         25.9         U         545         25.0           MERCURY         0.05         U         0.119         0.05         U         0.0595           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         218         U         10,600         1,880         1,880         1,880         1,880         2,750         1,880         2,750         1,880         2,750         1,950         6,800         2,750		MODESTOR	12,700	4,970	13 700	2.250			2
MERCURY         O.05         U         0.119         0.05         U         0.0595           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         218         U         10,600         1,880         11.7         J           SODIUM         6,140         1,950         6,800         2,750           THALLIUM         34.3         UJ         34.3         UJ         34.3         UJ           VANADIUM         49.4         2.41         U         48.5         16.2           ZINC         85.1         15.2         89.3         36.9           BENZYL ALCOHOL         0.032         U         0.032         U         0.032         U         0.032         U		MANGANESE	513	35.0		3,230	13,300	1,920	
NICKEL         0.05         U         0.119         0.05         U         0.0595           NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         218         U         10,600         1,880           SODIUM         6,140         1,950         6,800         2,750           THALLIUM         34.3         UJ         34.3         UJ         34.3         UJ           VANADIUM         49.4         2.41         U         48.5         16.2           ZINC         85.1         15.2         89.3         36.9           BENZYL ALCOHOL         0.032         U         0.032         U         0.032         U		Menoring	640	0 6.62	545	250	531	15.0	_
NICKEL         27         J         5.08         J         26.8         J         11.7         J           POTASSIUM         9,440         218         U         10,600         1,880           SODIUM         6,140         1,950         6,800         2,750           THALLIUM         34.3         UJ         34.3         UJ         34.3         UJ           VANADIUM         49.4         2.41         U         48.5         16.2           ZINC         85.1         15.2         89.3         36.9           BENZYL ALCOHOL         0.032         U         0.032         U         0.032         U		MERCORI	0.05 U	0.119	0.05	0.0506	: 0	 0	_
POTASSIUM         9,440         2.0         J. 26.8         J. 11.7         J. 11.7         J. SODIUM           SODIUM         6,140         1,950         6,800         2,750           THALLIUM         34.3         UJ         34.3         UJ         34.3         UJ           VANADIUM         49.4         2.41         U         48.5         16.2           ZINC         85.1         15.2         89.3         36.9           BENZYL ALCOHOL         0.032         U         0.032         U         0.032         U		NICKEL	1 16	. 80 3		0.000	0.05	0.05 U	_
SODIUM         5,140         218         U         10,600         1,880           SODIUM         6,140         1,950         6,800         2,750           THALLIUM         34.3         UJ         34.3         UJ         34.3         UJ           VANADIUM         49.4         2.41         U         48.5         16.2           ZINC         85.1         15.2         89.3         36.9           BENZYL ALCOHOL         0.032         U         0.032         U         0.032         U		POTACCITINA		00.0	f 8.07	11.7 J	25.2 J	13.6	
SODIUM         6,140         1,950         6,800         2,750           THALLIUM         34.3         UJ         34.3         UJ         34.3         UJ           VANADIUM         49.4         2.41         U         48.5         16.2           ZINC         85.1         15.2         89.3         36.9           BENZYL ALCOHOL         0.032         U         0.032         U         0.032         U		MOTOR	9,440	218 U	10,600	1 880	10 500	0.01	
THALLIUM 2,750  VANADIUM 34.3 UJ 34.3 UJ 34.3 UJ 34.3 UJ  VANADIUM 49.4 2.41 U 48.5 16.2  ZINC 85.1 15.2 89.3 36.9  BENZYL ALCOHOL 0.032 U 0.032 U 0.032 U		SODIUM	6.140	1 950	000	0000	000,01	Z18 U	_
VANADIUM 49.4 2.41 U 48.5 UJ 34.3 UJ ZINC 85.1 15.2 . 89.3 36.9 BENZYL ALCOHOL 0.032 U 0.032 U 0.032 U		THALLIUM		0074	0,000	2,750	6,840	1.420	
VANADJUM		VANABILINA		34.3 UJ	-	_	55.3	24.0	
ZINC 85.1 15.2 89.3 36.9  BENZYL ALCOHOL 0.032 U 0.032 U 0.032 U		MOIDWA	49.4	2.41	48 5			7.50	_
BENZYL ALCOHOL 0.032 · U 0.032 · U 0.032 · II 0.033 · II		ZINC	85 1	15.7	. o	7.01	8.74	2.41 U	_
0.032 0 0.032 11 0.032	SEMIVOLATILES	BENZYI, AI COHOI		7.61	89.3	36.9	84.1	8.84	
		TOTO TOTO TOTO		0.032 U	0.032	0.032			

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Northwest Trench - Subsurface Soil (continued)

		CRP-94-09B	CRP-94-09B	CRP-94-09C	CRP-94-09C	CRP-94-10B	CRP-94-10C
Group	Analytes	Sft	5 ft (dup)	10 ft	10 ft (dup)	SR	10 ft
METALS	ALUMINUM	006 92	35 100	20,400	900	6	
			20110	27,400	21,000	13,800	11,200
	ARSENIC	9.39	9.16	8.62	8.55	9.44	3.74
	BARIUM	211	236	215	196	80.8	112
	BERYLLIUM	1.55	1.41	1.27	1.38	0.637	1.0
	CALCIUM	45,000	31,500	31,800	27,000	18,600	77.000
	CHROMIUM	33.2	32.3	29.9	29.5	13.5	11.5
	COBALT	10	9.19	8.92	9.6	5.87	3.81
	COPPER	22.7	21.2	19.7	21.7	9.11	50.6
	IRON	32,900	30,400	29,400	31.500	14 200	11 400
	LEAD	18.4	11.7	13.8	15.5	15 6	13.4
	MAGNESIUM	14,000	13,300	10.400	11.300	\$ 150	200
	MANGANESE	530	526	490	255	215	067,4
	MERCURY	0.05 U	0.05 U	0.05	11 500	11 500	1/3
	NICKEL	24 J	21.8 J	23.4 J	22.6 J	13	0.00
	POTASSIUM	10,200	9,640	6,020	6.790	3,310	2,400
	SODIUM	2,680	5,250	5,230	5,760	2 440	2,590
	THALLIUM	45.7 J	34.3 UJ	50.1 J	34.3 UJ	34.3 111	34.3
	VANADIUM	43.4	42.3	36.7			
	ZINC	83	. 8.77	73.8	85	31.8	
SEMIVOLATILES	BENZYL ALCOHOL	0.049	0.032 U	0.061	0.056	11 000	730 0

Summary of Analytes Detected in Soil for the Chemical Range (SWMU 07)

Northwest Trench - Subsurface Soil (continued)

METALS ALUMINUM ARSENIC BARIUM ERYLLIUM CALCIUM CHROMIUM COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY	819 2.5 2.5 8.76 0.427 65,000 3.72	D D	9 ft		ij		1		
	819 2.5 8.76 0.427 65,000 3.72 3.66	n			110		10 lt		
ARSENIC BARIUM BERYLLIUM CALCIUM CHROMIUM COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY	2.5 8.76 0.427 0.427 3.72 3.66		819	n	819	ר	819	D	
BARIUM BERYLLIUM CALCIUM CHROMIUM COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY	8.76 0.427 65,000 3.72 3.66	ב	2.5	n	2.5	n	2.5	n	
BERYLLIUM CALCIUM CHROMIUM COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY	0.427 65,000 3.72 3.66	n	8.76	n	8.76	ח	8.76	n	
CALCIUM CHROMIUM COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY	3.72 3.66 3.66	n	0.427	ח	0.427	D	0.427	Ω	
CHROMIUM COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY	3.72	_	20,800		38,000		41,600		
COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY	3.66		2.91		2.52		3.67		
COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY	•		2.5	ח	2.5	ם	2.5	ב	
IRON LEAD MAGNESIUM MANGANESE MERCURY	12.9		4.66		2.84	ם	3.4		
LEAD MAGNESIUM MANGANESE MERCURY	1,360	n	1,360	D	1,360	n	1,360	Ω	
MAGNESIUM MANGANESE MERCURY	9.24		7.44	D	7.44	ח	7.44	n	
MANGANESE MERCURY	1,990		2,150		1,440		2,380		
MERCURY	158		25.9	n	25.9	n	25.9	ח	
IDACIN	0.05	n	0.02	n	0.02	n	0.05	n	
MCNEL	4.61	-	3.5	ſ	2.74	ח	3.84	ſ	
POTASSIUM	218	n	218	ח	218	ח	218	n	
SODIUM	69.1		78.4		49.6		88.1		
THALLIUM	48.7	ſ	34.3	'n	37.4	_	45.7	-	
VANADIUM	2.41	n	2.41	ח	2.41	ם	2.41	ב	
ZINC	33.5		12.4		31.7		14.6		
SEMIVOLATILES BENZYL ALCOHOL	0.032	ח	0.041		0.032	ם	0.032	ח	

NA = Not analyzed

U = Not detected; value is the Certified Reporting Limit.

Dup = Duplicate analysis

J = Value is estimated.

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Bullet Stops - Surface Soil

Group	Analytes	SAS-92-01 0 ft		SAS-92-02 0 ft	SAS-92-03	2-03	SAS-92-04	2-04	SAB-94-01A		SAB-94-02A
									11 010		11000
METALS	ALUMINUM	14000	131	8	15100		19200		10700	Ş	2
	ANTIMONY	19.6	J 19.	O 9.	19.6	<b>=</b>	19.6	1	19 6	-	2 5
	ARSENIC	5.72	7.3	34	10.8	,	8.47	)	7.41	, ,	: 1
	BARIUM	183	19	ē,	185		185		129	٠.	. 0
	BERYLLIUM	0.571	0.4	95	0.542		0.597		0.581	Ċ	. 48
	BORON	10.8	9.7	61	10.5		19.3		N A	; ~	2 4
	CALCIUM	84000	473	8	35,200		31,200		40.000	36	. 0
	CHROMIUM	91	14	9.	18.1		22.3		12.9		) F
	COBALT	4.91	6.5	38	6.22		6.4		\$ 20	•	35
	COPPER	18.8	14	بو	13.1		17.8		10.7	; <u>:</u>	ક ક
	IRON	15300	171	.8	18500		20200		15000	Ì	3 8
	LEAD	130	48	و	31		28		0 61	13.	3 8
	MAGNESIUM	8720	101	8	0006		10800		0880	, o	<b>₹</b>
	MANGANESE	307	30	<b>8</b>	441		405		317	6 7	3 5
	MERCURY	0.05	J 0.05	)S U	0.02	Ω	0.05	ם	0.0518	٠ د ا	05
	NICKEL	13.8	14.	.2	16.6		15.6		12.3	; ⊆	0
	POTASSIUM	2690	27.	10	3990		5050		1710	12	: S
	SILVER		J 1	ם	-	Ċ	_	=	1		? _
	SODIUM	247	28	<u>6</u>	275		358	1	310	7	. 5
	VANADIUM	21.4	20.	∞i	56		30		20	; <b>-</b> -	' ∝
	ZINC	52.9	53.	6.	62.4		71.7		42.7	7	213

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Bullet Stops - Surface Soil (continued)

Group	Analytes	SAB-94-03A 0.5 ft	SAB-94-04A 0.5 ft	SAB-94-05A 0.5 R	SAB-94-06A	SAB-94-07A	SAB-94-08A
METAIC					11 610	11 6.0	0.5 II
MEIALS	ALUMINUM	9950	6130	15200	17300	16200	14700
	ANTIMONY	62.1	19.6	11 961	10 6 11	20701	3741
	ARSENIC	13.0	777	2.5	0 0.61	19.0	97.2
	BARITIM	130	7		8.9	8.81	12.5
	BEDVI IIIM	071	5.5	203	215	180	192
	BOBON	0.517	0.427 U	0.85	0.835	0.839	0.797
	CALCILIA	V.	×z	ΥN	ΝA	X	Y Z
	CALCIUM	34,800	27,800	45,900	45,900	62,000	44 000
	CHROMIOM	12.6	7.99	17.5	50	8 81	2,700
	COBALT	4.34	4	7 34	2 40	0.04	/ 1
•	COPPER	315	100		0.40	•	90.9
	IRON	13500	1.57	13.0	20.8	178	879
	IFAD	0000	10600	20200	19800	19400	18900
	MAGNEGITIM	13000	788	545	1200	5900	26000
	MANG ANDOR	8100	2390	12200	11500	10900	11500
	MANGANESE	270	191	413	374	174	376
	MERCURY	0.05 U	0.05 U	0.05	11 100	11	3/0
	NICKEL	11.2	8.47	14.7	2010	50.5	0.00
	POTASSIUM	2020	1190	2160	61.00	13.1	15.5
	SILVER	11	1130	0017	0167	2810	2760
	MITIGOS	77.	- :	) 	ם .	1 1	-
	VANADITIM	342	1/1	382	426	426	459
	ZINZ	1/	10.9	56	27	25	23
	CINC	82.7	24.5	58.1	62.3	× 1×	3 5

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Bullet Stops - Surface Soil (continued)

Group	Analytes	SAB-94-09A	SAB-94-1 0.5 ft	SAB-94-10A 0.5 ft	SAS-94-01 0.5 ft		SAS-94-02 0.5 ft	SAS-94-03 0.5 ft	t -03	SAS-94-04 0.5 ft	6
METALS	ALUMINUM	6020	4400		12200	590	0	11900		15300	
	ANTIMONY	41.2	19.6	ח	42.3	19.	n 9	19.6	1	19 6	Ξ
	ARSENIC	7.41	5.77		11.9	6.3		5.9	)	6.55	)
	BARIUM	74.5	62.1		133	77.	· •	152		6	
	BERYLLIUM	0.427 U	0.427	n	0.639	0.427	0 Li	0.687		0.856	
	BORON	NA	Ϋ́		Ϋ́	ž ·	4	AN		Y.	
	CALCIUM	25300	30100		42600	312	8	43400		44900	
	CHROMIUM	8.2	6.27		15	8.5	6	16.1		18.3	
	COBALT	3.34	2.5	n	5.99	80.6	4	6.14		7.71	
	COPPER	88	9.25		243	14.	· <b>3</b> 0	15.4		15.6	
	IRON	11600	9100		16700	105	8	18000		20300	
	LEAD	7100	117		12000	10		39.1		45.5	
	MAGNESIUM	5430	5560		10400	44	C	11900		12000	
	MANGANESE	172	147		312	19	· v-	371		405	•
	MERCURY	0.0627	0.05	n	0.05	0.0	5 U	0.0537		20.0	Ξ
	NICKEL	7.73	7.18		11.5	7.0	,	13.9		15.4	)
	POTASSIUM	1030	746		2210	112	0	2190		2460	
	SILVER	0.803 U	0.803	D	0.803	) 0.8(	)3 U	0.803	n	0.803	Ξ
	Sodium	229	215		188	92.	7	183	,	1030	•
	VANADIUM	11.4	1.86	D	20	2.7	1 U	21.6		24.3	
	ZINC	34	19.7		73.6	96	0	1 2 Y		2 73	

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Bullet Stops - Surface Soil (continued)

Group	Analytes	SAS-94-04 0.5 ft (dup)	SAS-94-05 0.5 ft		SAS-94-06 0.5 R		SAS-94-07 0.5 ft	SAS-94-08 0.5 R	80
METALS	ALUMINUM	19000	17000	23	8	26600		17600	
	ANTIMONY	19.6	19.61	? <del>-</del>	11	10 6	Ξ	301	:
	ARSENIC	0 9	7.51		2	0.61	>	19.0	<b>-</b>
	BARIUM	20.	1C./	ď	<u>ر</u> و	6.89		6.91	
	BERYLLIUM	0 917	0 041	۰ ۲	3 2	567		215	
	RORON	NA	N. A. M.		) <u>.</u>	1.27		0.962	
	CALCIUM	VVI VVI	VAI.	<b>.</b>	٠	Y Z		٧×	
	CALCIUM	43800	45700	45	8	38100		48700	
	CHROMIUM	22.1	19.3	2:	5.3	28.3		20.6	
	COBALT	7.98	7.91	∞	\$	10.2		8.26	
	COPPER	16.5	16.7	~~	3.4	28.9		2 2	
	IRON	21700	21800	24	90	26900		22000	
	LEAD	71.6	204	7		205		\$1.3	
	MAGNESIUM	12200	12500	13		13400		12200	
	MANGANESE	405	438	4	3	269		13200	
	MERCURY	0.05 U	0.05	. 0	05	0.05	Ξ	436	11
	NICKEL	16.3	17.2	× =		200	)	5.00	<b>o</b>
	POTASSIUM	3030	2730	38	3810	3940		2830	
	SILVER	0.803 U	0.803	) 0.8	303 U	0.803	Ω	0.803	
	Sobium	1090	552	S	72	857	ı	523	)
	VANADIUM	29	25.3	32	<b>∞</b> :	35.2		27	
	ZINC	1 29	707		•				

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Bullet Stops - Subsurface Soil

ζ		SAB-94-01B	3AB-94-02B	SAB-94-03B	SAB-94-04B	SAB-94-05B	SAB-94-06B
Group	Analytes	3 11	3 ft	3 ft	30	3 ft	3 ft
METALS	ALUMINUM	18100	15200	18800	18100	18900	19600
	ANTIMONY	19.6 U	19.6 U	19.6 U	19.6	11 961	11 6 61
	ARSENIC	6.33	8.12	7.99	7.34	8.12	89.9
	BARIUM	172	199	229	211	681	250
	BERYLLIUM	0.875	0.828	0.933	0.882	0.964	101
	CALCIUM	53800	49900	55900	21100	54400	\$3900
	CHROMIUM	20.1	61	22.2	21.8	28.6	22.1
	COBALT	7.74	6.75	7.45	7.34	69 8	01 8
	COPPER	14.2	70.4	203	181	14.7	16.0
	IRON	21400	19500	21800	21000	25400	23600
	LEAD	16.7	1500	496	45.1	20.3	22.00
	MAGNESIUM	13500	11800	13100	12900	14500	13400
	MANGANESE	439	393	379	420	422	461
	MERCURY	0.0587	0.05 U	0.05 U	0.05 U	0.05	0.05
	NICKEL	15	16.6	17.8	17.6	20.1	17.7
	POTASSIUM	2590	2730	3570	4290	2300	3450
	SODIUM	799	439	885	683	554	896
	VANADIUM	31	25	29.7	27.2	41.4	31.3
	ZINC	60.9	71.3	71.1	77.3	71	77.5

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Bullet Stops - Subsurface Soil (continued)

Group	Analytes	SAB-94-07B 3 R	SAB-94-08B 3 ft	SAB-94-09B 3 ft	SAB-94-10B 3 n	
METALS	ALUMINUM	0081	20600	13000	17300	
	ANTIMONY	19.6 U	19.61	11 961	10 6 11	
	ARSENIC	6.13		6.54	8 47	
	BARIUM	240	229	144	279	
	BERYLLIUM	0.972	1.01	0.67	0.932	
	CALCIUM	46300	55100	38000	52700	
	CHROMIUM	20.7	23.5	14.3	20.5	
	COBALT	7.96	7.91	5.27	8.02	
	COPPER	15.1	19.1	11.5	17.8	
	IRON	22300	23100	15500	21700	
	LEAD	20.9	127	78.9	23.1	
	MAGNESIUM	13500	12700	8260	12900	
	MANGANESE	379	394	257	471	
	MERCURY	0.05 U	0.05	0.0637	11 500	
	NICKEL	17.1	18.2	110		
	POTASSIUM	2750	3820	2260	4070	
	SODIUM	1110	1150	674	1130	
	VANADIUM	28.7	32	18.4	26.3	
	ZINC	89	76.5	50.0	87.5	

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Firing Lines - Surface Soil

Group	Analytes	SAB-94-11 0.5 ft	SAB-94-12 0.5 ft	SAB-94-13		SAB-94-14	SAB-94-15	SAS-94-09	L
							11 600	11 6.0	
METALS	ALUMINUM	12400	16200	20400	2000	c	18700	00902	
	ARSENIC	5.37	6.41	0 07	7		20.5	20007	
	BARIIIM	156	101	200	9.0		C) -	0.30	
		000	101	795	177		202	222	
	BERYLLIUM	0.701	0.963	1.14	0.92	2	696'0	0.961	
	CALCIUM	38400	28000	45400	4300	0	47600	46700	
	CHROMIUM	15.4	19.5	23.4	25.		23.3	73.7	
	COBALT	5.62	7.93	10.2	7.4		7 08	7 03	
	COPPER	11.6	19	19.7	14		7 2	5.7	
	IRON	18000	21800	27400	2270	. c	23100	23000	
	LEAD	18.8	33.8	25.5	61	·	19.2	2000	
	MAGNESIUM	11500	10700	13600	1220	. c	13200	1,000	
	MANGANESE	409	384	661	308	<b>&gt;</b>	303	436	
	MERCURY	0.05 U	0.0684	0.05	200	=	0.05	430	_
	NICKEL	13	18.4	24	18.2	)	18.7	0.0	,
	POTASSIUM	1910	2890	3220	4300	. ~	3850	3170	
	SODIUM	407	496	513	428		503	454	
	VANADIUM	21.1	24.8	31.6	33.6		32.6	3 2	
	ZINC	51.9	73	93.6	74.4		75.7	71.1	

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Firing Lines - Surface Soil (continued)

METALS         ALUMINUM         19100         12700           ARSENIC         7.03         8.24           BARIUM         228         171           BERYLLIUM         0.938         0.717           CALCIUM         47200         50300           CHROMIUM         21.5         17.3           COPPER         16         18           IRON         20         67.3           MAGNESIUM         22400         19200           LEAD         20         67.3           MAGNESIUM         12800         11200           MAGNESIUM         22400         19200           MECURY         0.05         U         0.05           NICKEL         16         16.2           POTASSIUM         2390         2390           SODIUM         30.2         2350           VANADIUM         30.2         22.5           ZINC         225.5         22.5	Analytes 0.5 ft (dup)	SAS-94-10 0.5 ก	SAS-94-11 0.5 ft	SAS-94-18	SAS-94-19	SAS-94-19
ALUMINUM ARSENIC ARSENIC BARIUM BARIUM CALCIUM CCALCIUM COBALT COPPER IRON LEAD MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SODIUM 30.2 730.7				71 600	11 6.0	U.S IT (dup)
7.03 7.03 228 0.938 47200 21.5 8.21 16 22400 20 12800 455 0.05 0.05 16 2970 436	19100	00761	0000			
228 0.938 47200 21.5 8.21 16 22400 20 12800 455 0.05 U 16 2970 436	00171	77	10000	200/	17800	16600
228 0.938 47200 21.5 8.21 16 22400 20 12800 455 0.05 U 16 2970 436	7.03	8.24	6.83	8.68	7 74	7 74
0.938 47200 21.5 8.21 16 22400 20 12800 455 0.05 16 2970 436		171	173	101	0.00	13:1
47200 47200 21.5 8.21 16 22400 20 12800 455 0.05 16 2970 436		1110	, , ,	121	017	117
21.5 8.21 16 22400 20 12800 455 0.05 U 16 2970 436		0.71/	0.796	0.893	906.0	0.922
21.5 8.21 16 22400 20 12800 455 0.05 U 16 2970 436		20300	47800	42900	58000	53500
8.21 16 22400 20 12800 455 0.05 16 2970 436		17.3	19 4	0 01	216	
16 22400 20 12800 455 0.05 16 2970 436		26.2		6.0	0.12	19.7
16 22400 20 12800 455 0.05 U 16 2970 436 30.2		00	/1./	8.11	7.83	7.94
22400 20 12800 455 0.05 U 16 2970 436 30.2		<b>8</b>	16.5	15.0	17.4	16.5
20 12800 455 0.05 16 2970 436 30.2		19200	19700	22400	1.1.1	5,000
12800 455 6.05 U 16 2970 436 30.2		222	20.00	00477	22300	21300
12800 455 0.05 U 16 2970 436 30.2		67.3	33.1	17.9	18.7	18.1
455 0.05 16 2970 436 30.2		11200	12400	11800	13500	13200
0.05 U 16 2970 436 30.2		418	415	430	413	207
2970 16 2970 436 30.2		30.0		675	714	413
16 2970 436 30.2		0.00	0.02	0.05	0.05 U	0.05 U
2970 436 30.2		16.2	14.8	17.4	88	17.6
436		2390	2840	3120	3580	3330
30.2		171	700	223	250	3320
3.05 moral			171	623	330	339
	30.7	22.5	24.7	26.1	29	25.5
70.3	70.3	66.2	66.1	72.2	75.8	2 52

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Firing Lines - Surface Soil (continued)

SAS-94-20 0.5 ft	16200	7.01	, , , , , ,	0.861	49400	20.3	7.36	20.7	20600	17		394	0.05 U	15.9	4750	266	25.5	73.4
Analytes	ALUMINUM	ARSENIC	BARIUM	BERYLLIUM	CALCIUM	CHROMIUM	COBALT	COPPER	IRON	LEAD	MAGNESIUM	MANGANESE	MERCURY	NICKEL	POTASSIUM	SODIUM	VANADIUM	ZINC
Group	METALS																	

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Firing Lines - Subsurface Soil

2000	A	SAB-94-11B	SAB-94-12B	SAB-94-13B	SAB-94-14B	SAB-94-15B
dia 16	Allalytes	211	3.10	3.11	3.11	3 ft
METALS	ALUMINUM	8400	15100	18300	21900	17700
	ARSENIC	5.52	7.11	9.87	6.03	6.37
	BARIUM	82.1	163	168	197	195
	BERYLLIUM	0.427 U	0.875	0.902	0.944	1.07
	CALCIUM	21400	42800	20800	40100	40800
	CHROMIUM	13.2	18.6	22.6	40.2	23.3
	COBALT	4.56	7.69	7.61	8.06	7.17
	COPPER	9.21	13.5	14.5	17	15.9
	IRON	13800	20700	22200	22900	21100
	LEAD	12.3	15.9	15.7	18.6	19.3
	MAGNESIUM	9040	12100	13000	12200	11400
	MANGANESE	428	340	453	415	396
	NICKEL	11.6	17.4	16.2	23.2	17.5
	POTASSIUM	1290	2250	2220	4290	3350
	SELENIUM	0.449 U	0.449 U	1.93	0.449 U	0.449 U
	SODIUM	278	694	781	839	793
	VANADIUM	20.6	25.6	34.3	36.9	29.2
	ZINC	40.5	67.4	55.8	75	71.6

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Area Between Firing Lines - Surface Soil

Group	Anolytee	SAS-94-12	SAS-94-13	SAS-94-14	SAS-94-15	SAS-94-16	SAS-94-17
	Car (mile)	11 6.0	0.5 11	U.5 IL	0.5 น	0.5 R	0.5 ก
METALS	ALUMINUM	18900	11200	18000	0860	17600	00021
	PROFINIT	36.36	2	101	20/1	41000	1000
		6.0	Ç.,	10.1	1.74	9.65	6.71
	BARIOM	234	155	193	150	200	175
	BERYLLIUM	0.938	0.597	0.877	0.591	0.887	177.0
	CALCIUM	49400	52700	26900	29000	42000	28300
	CHROMIUM	20.9	16.1	23	14.8	22.0	30.0
	COBALT	8.86	9	•	<u> </u>	0 11	۲۰۰۲
	COPPER	16.4	14.4	16.1	2.5	10.1	710
	IRON	22400	18200	22600	17300	7,100	0.12
	LEAD	717	0 07	75.7	2007	000	20300
	MAGNESHIM	13700	2,27	7.67	33.3	70.9	20.4
	MANDANIE	13/00	12900	811	11800	13200	13500
	MANGANESE	341	365	513	371	446	527
	MERCURY	0.0s U	0.0536	0.05 U	0.05 U	0.05	0.05
	NICKEL	17.5	13.8	18.7	14.1	17.8	13.7
	POTASSIUM	3720	2140	4370	2260	4330	2002
	SODIUM	331	223	272	191	77.0	300
	VANADIUM	26.6	23.3	30.4	21.3	28	767
	ZINC	76.5	09	88.6	58.3	86.8	87

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Drainage Area - Surface Soil

	Analytes	0.5 R	5AB-95-02A 0.5 A	SAB-95-03A 0.5 R	SAB-95-04A 0.5 ft	SAB-95-05A	SAB-95-06A
							41.00
METALS	ALUMINUM	14100	20500	00000	00.00		
	ADCEMIC		0007	20202	77100	19500	17500
	ANSEINIC	8.63	6.13	9.4	8.75	9.26	101
	BARIUM	160	248	220	PCC	210	1.01
	BERYLLIN	0.613	9100	277	+77	210	747
	CANAILM		CI 6.0	0.963	1.01	0.871	0.846
	CADMIOM	1.2 0	1.2 U	1.2 U	1.2 U	1.2 11	1.2
	CALCIUM	31600	23000	36700	38100	42000	27500
	CHROMIUM	19.8	23.5	24.1	7 70	24.4	37.6
	CORALT	01.3		17.17	70.4	4.4	24.5
	CODDED	67.0	7.77	7.66	8.45	7.92	7.79
	COFFER	SI	17	20.9	20.1	18.1	17.0
	IKON	17800	21100	22800	23800	22100	21100
	LEAD	21.5	17.5	22.3	19.6	23.3	3117
	MAGNESIUM	10401	217	2300	0.71	23.3	17.5
	MANGANEGE	020	14100	13200	14000	11900	11600
	Mending	3/0	524	478	528	438	445
	MERCURI	0.05	0.05 U	0.05 U	0.05 U	0.05	1 50 0
	NICKEL	14.2	16.9	18.2	18.9	28.5	10.6
	POTASSIUM	3560	5550	5370	6060	4310	7750
	SELENIUM	0.449 UJ	0.449 UJ	0.449	0 440	Ī	
	SODIUM	526				60 64.40	0.449 UJ
•	VANADITIM			214	760	576	573
	ANADIOM	8.8	32.1	33.8	35.7	35.1	33
	ZINC	67.1	84.7	89.5	95.7	5.18	25.1

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Drainage Area - Surface Soil (continued)

Group	Analytes	SAB-95-07A 0.5 ft	SAB-95-08A 0.5 ft	SAB-95-09A	A SAB-95-10A	SAB-95-10A	SAS-95-01	_
						(dnn) 11 Cio	11 600	
METALS	ALUMINUM	19400	21700	15300	11800	12400	00016	
	ADCENIC	76.7		200	00011	00.471	70017	
	THOUSE THE PARTY OF THE PARTY O	0.34	0.00	96.7	7.87	7.64	8.66	
	BARIOM	216	217	180	146	147	238	
	BERYLLIUM	0.845	0.97	0.805	955 0	PC5 0	920 0	
	CADMIUM	1.2 U	1.2 U	1.2	11 2 11	1.2	1,7	-
	CALCIUM	43100	40900	34200	34800	7:1	7.7	>
	CHROMITIM	22.6	3 3 5 6	00746	3400	30200	4/300	
	CINCINION	23.0	C.C2	19.5	20.3	21.5	24.7	
	COBALI	7.01	7.91	7.56	5.03	5.35	7.94	
	COPPER	17.6	18.9	16.9	13	12.8	20.8	
	IRON	21400	22600	19700	17400	17500	22600	
	LEAD	50	17	19.2	16.4	13	45.4	
	MAGNESIUM	12400	13400	11500	9530	0100	13700	
	MANGANESE	429	440	426	326	325	573	
	MERCURY	0.05 U	0.05 U	0.05 U	0.05	11 50.0	50 0	=
	NICKEL	17.9	18.5	17.4	12.6	2.	10.7	)
	POTASSIUM	4690	6260	3920	2710	2810	5490	
	SELENIUM	0.449 UJ	0.449 UJ	0.449 UJ		0.449	0.449	111
	SODIUM	545	571	499	482	468	629	;
	VANADIUM	32.9	33.9	28.3	30.7	32.3	34.6	
	ZINC	81	87	77.1	55.6	58.3	88	

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Drainage Area - Surface Soil (continued)

Group	Analytes	SAS-95-02 0.5 ft	SAS-95-03 0.5 ft	SAS-95-04 0.5 N	SAS-95-05 0.5 R	SAS-95-06 0.5 ft	SAS-95-07
METALS	ALUMINUM	20200	20500	00880	96531	00000	
	APCENIC		0000	78900	MCCI	20000	23000
	Charles		9.75	9.5	7.55	6.98	6.45
	BAKIUM	241	225	365	176	300	24.5
	BERYLLIUM	0.94	96 0	-	220	077	747
	CADMIIM			C:1	0.728	0.938	1.14
		0 7.1	1.43	1.2 U	1.2 U	1.2 U	1.42
	CALCIOM	48000	40500	20200	31300	38500	34500
	CHROMIUM	23.6	25.1	27.7	20.5	7 76	2.50
	COBALT	= 8	8 03	101		1:47	6.17
	COPPED		0.0	10.1	71./	8.39	8.52
	TON	19.3	70.9	22.4	19	22.8	23.9
	T T T T T T T T T T T T T T T T T T T	22700	22600	28000	19700	22800	26000
	LEAU	61	23.2	25.6	30.3	28.6	25
	MAGNESIOM	13700	14000	13300	10900	11700	13400
	MANGANESE	505	516	828	404	203	244
	MERCURY	0.05	11 50 0	0.05	1 7230 0	::	344
	NICKEL	18.2	18.2	316	1.0.0 1.0.0	0.03	0.0565
	POTASSITIM	6630	7.00	21.0	CI	21.5	22.5
	eti tamina			4400	3680	4610	5710
	SELENIOM	0.449 UJ	0.449 UJ	0.449 UJ	0.449 UJ	0.449 UJ	0 449
	SODIOM	591	554	2250	547	201	405
	VANADIUM	32.8	34.3	37.3	30.1	34	27.7
	CNIX	07.0		0 10			:

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Drainage Area - Surface Soil (continued)

		6-SAS-9	2-08	SAS-9	2-09	SAS-95-10	5-10	SAS-95-10	5-10	
Group	Analytes	0.5 ก	_	0.5 ก	_	0.5 ก	=	0.5 ft (dup)	(dnp)	-
METALS	ALUMINUM	16400		16400		12800		16400		
	ARSENIC	9.16		9.07		6.77		6.77		
	BARIUM	203		207		143		178		
	BERYLLIUM	0.761		0.788		0.427	Ω	0.732		
	CADMIUM	1.2	ם	1.2	n	1.2	Ω	1.2	Ω	
	CALCIUM	35200		42600		26000		32800		
	CHROMIUM	20.6		20.5		18.3		22.4		
	COBALT	86.9		7.79		5.49		6.26		
	COPPER	18.3		17.4		14.5		17.6		
	IRON	20500		20300		16100		19900		
	LEAD	24.8		23.1		17.6		20.9		
	MAGNESIUM	11100		11500		9410		11600		
	MANGANESE	448		437		333		404		
	MERCURY	0.02	n	0.0519	-	0.02	n	0.05	D	
	NICKEL	16.7		17.6		11.7		15.3		
	POTASSIUM	4230		3910		3310		4100		
	SELENIUM	0.449	n	0.449	n	0.449	5	0.493		
	SODIUM	463		497		476		563		
	VANADIUM	29.3		29.5		27.3		33.5		
	ZINC	80		74.2		58.5		73.9		

Table \_\_\_\_. Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Drainage Area - Subsurface Soil

Group	Analytes	SAB-95-01B 3 ft	SAB-95-02B 3 ft	SAB-95-03B	SAB-95-04B	SAB-95-05B	SAB-95-06B
						11.0	316
METALS	ALUMINUM	5980	19500	23100			
	ADCENIC	2000	Meel	77100	24700	19700	6830
		4.4/	6.38	7.99	80.0	6.71	
	BARIUM	29	165	366	171	0.71	. د
	BERYLLIUM	11 777 11	107.0	207	147	877	4.4
	CALCITIM	0.427	0.091	0.978	1.12	0.961	0.427
		70907	49100	53300	38000	48300	25200
	CHROMIUM	9.12	20.1	24.9	28.0	3.50	33
	COBALT	2 80	6 64		50:0	6.63	13
	COPPER	6:3		0.4/	8.31	8.2	2.94
	NOdi	6/10	14	16.3	21.4	18.4	99 9
•	INOIN	10000	23900	23300	25400	22100	00101
	LEAD	7 44 11	36	16.0	i c	26100	M/M
	MAGNESITIM		200	10.0	18.7	24.6	7.44 U
	MANGANECE	000	081	14000	14500	12600	5550
	Manager	0 9.67	363	453	260	481	70 6 11
	MERCUKY	0.05 U	0.05 U	0.05	0.0611	11 300	5.0
	NICKEL	7 66	17.9			0.00	0.00
	POTASSIIM		0.71	1/.1	20.4	20.3	8.0 <sub>6</sub>
	MINISTER	763	3510	3240	0899	4660	283 11
	SOCION	519	672	1590	663	501	27.3
	VANADIUM	15.7	32.7	18.7	207	100	0/0
	ZINC	37.0	7 36		10.4	37.0	19.7
		21.7	4.07	8.1/	101	8 P8	78.7

Summary of Analytes Detected in Soil for the Small Arms Firing Range (SWMU 8)

Drainage Area - Subsurface Soil

C		SAB-95-07B	SAB-95-08B	SAB-95-09B	SAB-95-10B	SAB-95-10B	
Group	Analytes	30	3 ft	3 ft	3 ft	3 ft (dup)	
METALS	ALUMINUM	14100	20200	17300	00001	1900	
	ADSENIC	2 61	00707	2001	10500	11300	
	ANSEMIC	3.51	5.86	2.5 U	5.33	6.02	
	BARIOM	162	231	234	144	152	
	BERYLLIUM	0.616	9960	0.735	0.427	0 541	
	CALCIUM	33500	62000	39100	20000	13200	
	CHROMIUM	20.5	23.3	18.2	18.3	30.6	
	COBALT	6.15	8.5	6.57	5.47	7.03	
	COPPER	12.6	16.5	12.7	11.4	20: / L C1	
	IRON	18700	22600	17900	15600	16600	
	LEAD	15.7	5.83	12.7	14.7	14.0	
	MAGNESIUM	9630	13100	10200	9330	8050	
	MANGANESE	380	381	271	298	301	
	MERCURY	0.05 U	0.0824 J	0.05	11 50 0	11 500	
	NICKEL	16	17.5	13.3	10.5		
	POTASSIUM	2540	3480	3250	2680	2820	
	SODIUM	1030	1970	1680	463	787	
	VANADIUM	24.4	34.9	25.1	27.4	200	
	ZINC	52.5	76.4	9	24.2	P 33	
All values are in µg/g (equal to ppm)	equal to ppm)				7:00	1.00	

NA = Not analyzed
U = Not detected; value is the Certified Reporting Limit.
Dup = Duplicate analysis
J = Value is estimated

Summary of Analytes Detected in Soil for the Tire Disposal Area (SWMU 13)

#### Surface Soil

Group	Analytes	0.5 ft	VIA.	1 DP-94-02A 0.5 M		TDP-94-03A 0.5 ft	TDP-94-04A	04A	TDP-94-05A	)5A	TDP-94-06A	96A
									11 6.0		0.5 ผ	_
METALS	ALUMINUM	647	=	7 150	,							
	ARSENIC		•	4,100	8,60	0	12,600		7.540		770	:
		6.93		4.25	<u>4</u>	_	, ,		201.		611	•
	BARIUM	42.2		0 75			1.0		4.03		2.5	D
	BERYLLIUM	0.437	=				84.7		73.2		7.32	=
	CALCITIM	0.467	>	0.42/ U		7 U	0.518		0.427	=	100	:
		30,100		35,200	46.90	9	70.000		12.0	>	0.47	<b>-</b>
	CHROMIUM	4.91		5.05		,	00,00		22,600		43,000	
	COBALT	2.5	Ξ		777	_	26.5		14.5		3.41	
	COPPER	;	•	C.2	3.43		4.74		3.33		2 6	=
	NOM	3.30		4.17	7.7		20		90 0		; ;	)
	NOW!	985	Þ	5.310	IPE O		2000		2.62		3.72	
	LEAD	14.7		2	£		13,300		9,070		5,580	
	MAGNESIUM	2 540		2 ;	4.	Ď	23		11.7		7 44	=
	MANGANEGE	3,340		4,110	4,75(		7.690		0 460		F (	0
	MAINGAINESE	20.8	n	121	170		201		0,400		3,670	
	MERCURY	0.05	ם	0.00			700		204		17.5	ם
	NICKEL	2.74	· =	2.00	0.03	)	0.0563	-	0.05	n	0.05	
	POTASSIUM	0.70	•		5.33		9.16		6.32		3.55	•
	MILLOS	0/0		991.1	2,520		3.340		1 010			;
	COLOIM	<u>86</u>		192	263		256		012,1		184	כ
	VANADIUM	1.56	Ω	1 56 11	201		007		258		70.2	
	ZINC	35	1		13.7		21.6		15.9		1.56	Ω
SEMIVOLATILES	BIS (2-ETHYLHEXYL) PHTHALATE	0 48	11	0.10	29.2		49.9		36.4		13.5	,
	CHRYSENE	0000	•	0.40	0.48	D	0.48	ם	0.48	n	0.48	=
	FLUORANTHENE	0000		0.037	0.032	n	0.032	Þ	0.032	=	0.027	=
	PHENANTIBENE	0.091		0.053	0.032	ם	0.032	=	0 033		20.0	> ;
VOI ATH ES	TIENTHURENE	0.074		0.032 U	0.032		0 033	) <u>:</u>	0.032	<b>o</b> :	0.032	)
VOLATILES	I, I, I-TRICHLOROETHANE	0.21		0.2			0.032	>	0.032	<b>-</b>	0.032	ם
	1,3-DICHLOROBENZENE	0.14	=	2	7:0		0.2	<b>&gt;</b>		ם	0.2	ב
	CHLOROMETHANE	90	· =	0.04	0.14		0.14	n		ב	0.14	=
	DICHLOROBENZENE - NONSPEC	0.0	) <b>=</b>	0.30	0.96	Þ	96.0	Ω	0.96	Ω	96.0	=
				7.7			•					)

Summary of Analytes Detected in Soil for the Tire Disposal Area (SWMU 13)

Surface Soil (continued)

Group	Analytes	TDP-94-07A 0.5 ft	.07A	TDP-94-08A 0.5 n	08A	TDP-94-09A	-09A	TDP-94-09A	A60	TDP-94-10A	10A	TDP-94-11A	11.4
METALS	ALIMINIM	9										11 6.0	
	ARSENIC	0,940		1,170	D	1,170	D	779	D	1,170	D	1.170	Ξ
	BABILINA	C/.7		2.81		2.81		2.53		4		7	)
	MONYO	24.6		10.5	D	10.5	n	7.32	=	10.5	Ξ	3.5	;
	BERTLEIUM	0.427	Þ	0.427	ב	0.427	Ξ	0.433	, :		<b>.</b>	0.01	>
	CALCIUM	32.000		43 000	,		>	0.427	>	0.427	D	0.427	Þ
	CHROMIUM	2 61		000°C		24,700		25,300		30,600		32,700	
	COBALT	10.5 10.5		6.83	;	4.87		6.03		7.21		3.22	
	COPPER	5		7.3	<b>-</b>	2.5	Þ	2.5	n	2.5	n	2.5	=
	NOG	0.39		80.9 •		6.81		5.31		90.0		0 0	•
	inoin	9,060		1,610	n	1,610	Ω	4.870		1 610	=	0.71	;
	LEAD	7.78		7.44	Ω	7.4	Ω	7.44	Ξ	10.6	>	1,010	>
	MAGNESIUM	4,440		3.970		2 630			>	10.0		9.24	
	MANGANESE	5		31 6	=	2000	:	2,330		3,740		4,400	
	MERCURY	3	:	01.5	<b>&gt;</b> :	31.3	>	17.5	ם	31.5	n.	31.5	=
	NICKEL	0.00	>	0.05	<b>-</b>	0.0691	_	0.05	Ω	0.05	D	0.05	=
	POTASSITIM	5.53		7.84	D	7.84	n	2.74	n	7.84	=	7 84	) <b>:</b>
	Midos	1,650		239	n	239	Ω	184	Ω	239	=	230	) =
	SOLIOIM	154		112		72.1		134		110	<b>,</b>		>
	VANADIOM	12.2		2.93	n	2.93	=	1.56	Ξ		:	4.1.4	1
	ZINC	8.97		31.7		2.8	=	13.0	>	6.33	>	2.93	0
SEMIVOLATILES	BIS (2-ETHYLHEXYL) PHTHALATE	0.48	D	20		0 48	) <u>=</u>	7.5	:	16.7	;	59.3	
	CHRYSENE	0.032	Ξ		=	200	· :	0.40	>	0.48	D	20	
	FLUORANTHENE	0.032	) <b>=</b>		> =	0.032	<b>)</b> ;	0.032	n	0.032	n	0.3	ב
	PHENANTHRENE	0.00	) <u>:</u>	6.9	<b>;</b>	0.032	<b>-</b>	0.032	n	0.032	Ω	0.3	n
VOLATILES	1 1. TRICHI ODORTIJANE	20.0	<b>&gt;</b> :	0.3	)	0.032	Þ	0.032	Ω	0.032	ב	0.3	=
	1 3-DICHI OBOBENZENE	7.0	<b>&gt;</b> :	0.7	ם	0.2	n	0.7	Ω.	0.2	n	0.2	· =
	CHI OBOMETUANE	0.14	<b>)</b>	0.14	n	0.14	D	0.14	Ω	0.14	Ω	0 14	) <b>=</b>
	DICHI OBOBENIZENIE NOMBEG	8. °	<b>)</b>	96.0	n	0.96	Ω	96.0	ם	96.0	=	90 0	) <u>=</u>
	DICTIONOBEINGEINE - INCINSPEC	0.2	5	0.2	Ω	0.7	Ω	0.2	n	0.0	, =	3 5	) <b>:</b>

Summary of Analytes Detected in Soil for the Tire Disposal Area (SWMU 13)

Surface Soil (continued)

		TDP-94-12A	TDP-94-13A	TDP-94-14A	TDP-94-15A	A
Group	Analytes	0.5 ก	0.5 ก	0.5 ft	0.5 R	!
METALS	ALUMINUM	6,770	8,180	096.6	770	1
	ARSENIC	3.95	3.88	4.76	, , ,	· :
	BARIUM	54.5	59.3	208	7.37	
	BERYLLIUM	0.427 U	0.427	0 427	707	
	CALCIUM	35,400	31.400		20.427	o
	CHROMIUM	7.61	10.9	11.0	00°00	
	COBALT	2.5 U	3.39	3.65	7.07 7.5	=
	COPPER	12.4	8.6	) e	C:7	
	IRON	1,610 U	9.770	10 700	7.5	
	LEAD	7.98	10.4	20,100	30.0	
	MAGNESIUM	4 250	4 430	C+.0	10.7	
	MANGANEGE	1,430	4,420	2,040	3,570	
	MAINONINESE	31.5 U	147	209	105	
	MERCURY	0.0579 J	0.05 U	0.0573	0.05	
6	NICKEL	7.84 U	80.9	5.98	3.87	ò
	POTASSIUM	1,560	2.050	2 310	701	
	SODIUM	131	165	208	120	o
	VANADIUM	2.93 U	14.1	15.7	95 -	11
		30.1	37.2	38	7.10	
SEMIVOLATILES		0.48 U	0.48 U	0.48	0.48	12
	CHRYSENE	0.032 U	0.032	0.032	0.00	
	FLUORANTHENE	0.032 U	0.032 U	0.032	0.032	) ::
	PHENANTHRENE	0.032 U	0.032	0 033	0.032	
VOLATILES	1,1,1-TRICHLOROETHANE	0.2 U	0.2	0.032	20.0	<b>.</b>
	1,3-DICHLOROBENZENE	0.14 U		7:0	7.0	o :
	CHLOROMETHANE	0.96 U	0.7	11 960	0.04	o
	DICHLOROBENZENE - NONSPEC	0.2 U	3.3	0 0	2.5	o :
				7:0	7.0	<b>5</b>

Summary of Analytes Detected in Soil for the Tire Disposal Area (SWMU 13)

### Subsurface Soil

		TDP-94-01B	0113	TDP-94-02B	TDP-94-03B	-03B	TDP-94-04B	AB	TDP-94-05B	05B	TDP-94-06B	1-06B
Group	Analytes	5 ft		5 N	5 n		5 n		5 ft	يع	5 ft	سو
METALS	ARSENIC	2.5	n	2.57	3.04		2.5	1	2 6	1	3 6	=
	CALCIUM	48,800		29.600	42.600		36 800	)	28 300	>	22, 150	>
	CHROMIUM	2.02		1.99	14.2		4.1		4.31		3,60	
	COBALT	2.5	Ω	2.5 U	2.83		2.5	ם	2.5	Ω	2.5	=
	COPPER	2.84	n	2.84 U	2.84	D	2.84	n	3.52		2.84	=
	IRON	985	ם	985 U	9,110		6.400		4 860		063	> =
	MAGNESIUM	4,490		1,620	4,220		3.860		3.260		2.540	•
	MANGANESE	20.8	n	20.8 U	104		17.5	D	17.5	Ω	17.5	=
	MERCURY	0.05	ם	0.05 U	0.05	ם	0.0519	_	0.05	ם ס	0.05	) <b>=</b>
	NICKEL	2.74	n	2.74 U	3.72		5.06		3.73	I	3.23	)
	SODIUM	141		232	191		187		138		2	
	VANADIUM	1.56	D	1.56 U	22.4		1.56	n	1.56	Ω	1.56	=
	ZINC	2.86	Ω	2.86 U	17.5		12.2		11		7.52	)
SEMIVOLATILES	DIETHYL PHTHALATE	0.24	ח	0.24 U	0.24	n	0.36		0.24	D	0.24	=
	DI-N-BUTYL PHTHALATE	1.3	Ω	1.3 U	1.3	n	1.3	Ω	1.3	=	-	· =

Summary of Analytes Detected in Soil for the Tire Disposal Area (SWMU 13)

# Subsurface Soil (continued)

ζ		TDP-94-07B	07B	TDP-94-08B	8	TDP-94-09B	9B	TDP-94-09B	19B	TDP-94-10B	10B	TDP-94-11B	4-11B
dnoab	Analytes	5 ft		Sn		5 ft		5 ft (dup)	a	5 R	-	SR	ایے
METALS	ARSENIC	2.5	n	3.87		2.5	Ω	2.5	=	2.5	=	1 20	
	CALCIUM	8,810		33,200		39,700	ı	33 100	)	23 600	)	20 600	
	CHROMIUM	2.48		3.32		5.52		20,100		32,000		15.7	
	COBALT	2.5	ם	2.5	D	2.5	n	2.5	ם	2.5	=	2,66	
	COPPER	2.84	D	3.19		3.43		2.84	ם ס	3.78	)	3.04	
	IRON	963	D	1,610	Ω	1,610	Ω	963	n	1.610	=	0.760	
	MAGNESIUM	974		2,840		5,910		3,180	,	4.560	)	5.700	
	MANGANESE	17.5	Ω	31.5	n	31.5	n	17.5	Ω	31.5	Ω	31.5	=
	MERCURY	0.05	Ω	0.05	n	0.02	Ω	0.05	n	0.05	· =	0.05	) =
	NICKEL	2.74	n	7.84	n	7.84	D	2.74	n	7.84	=	7.84	· =
	SODIUM	66.5		74.4		101		201		8	)	126	)
	VANADIUM	1.56	Ω	2.93	Ω	2.93	D	1.56	n	2.93		25.2	
	ZINC	3.21		2.8	n	2.8	Ω	8.76		2.8	: =	17.2	
SEMIVOLATILES	DIETHYL PHTHALATE	0.24	Ω	0.24	Ω	0.24	n	0.24	Ω	0.24	ם ם	0.24	₽
	DI-N-BUTYL PHTHALATE	1.3	Ω	1.3	ם	1.7			-	-	:		• =

Summary of Analytes Detected in Soil for the Tire Disposal Area (SWMU 13)

Subsurface Soil (continued)

		TDP-94-12B	12B	TDP-94-13B	13B	TDP-94-14B	48	TDP-94-15B	SB	
Group	Analytes	5 ft		รน		5 ft		SR		
METALS	ARSENIC	2.5	ם	2.5	D	2.5	n	3.97		
	CALCIUM	11,300		14,200		35,200		37,300		
	CHROMIUM	1.38		2.12		9.32		12		
	COBALT	2.5	n	2.5	n	2.5	Ω	3.08		
	COPPER	2.84	D	2.84	Ω	2.84	Ω	2.84	ח	
	IRON	1,610	Ω	963	Ω	6,910	•	8.700		
	MAGNESIUM	1,710		1,640		4,150		4,120		
	MANGANESE	31.5	n	17.5	Ω	17.5	Ω	97.4		
	MERCURY	0.05	n	0.03	n	0.02	n	0.05	ם	
	NICKEL	7.84	n	2.74	Ω	4.08		4.65		
	SODIUM	74.5		59.1		167		110		
	VANADIUM	2.93	D	1.56	ם	14.5		18.8		
	ZINC	2.8	n	4.06		13.7		15.4		
SEMIVOLATILES	DIETHYL PHTHALATE	0.24	n	8		0.24	Ω	0.24	D	
	DI-N-BUTYL PHTHALATE	1.3	ם	10	=	1.3	=	-	- 11	

All values are in µg/g (equal to ppm)

NA = Not analyzed

U = Not detected; value is the Certified Reporting Limit

Dup = Duplicate analysis J= Value is estimated

Summary of Analytes Detected in Soil for the Building 1303 Washout Pond (SWMU 22)

#### Surface Soil

Cross	1.00	10-26-SW8	10-2	BWS-92-02	20-7	BWS-92-03	12-03	BWS-92-04	2-04	BWS-92-05	2-05	RWS-02-06	20.0
dnoso	Analytes	0.5 ก		0.5 ก	اے	0.5 ก	_	0.5 ก	بع	0.5 ก	نبتر	0.5 R	يع ا
CYANIDE	CYANIDE	40	=	17.5		¥	=	•	:				
ANIONS	NITRATE	. *	)			n	>	c	)	S	<b>&gt;</b>	5	ר
	NITTOTAL	4.08		3.36	n	3.16		2.79		2.15		2 68	•
EVDI OCIVEC	1 2 6 Transmission	3.16	D	4.37	٠	3.16	n	3.16	D	3.16	=	2 16	Ξ
AI LUSI VES	1,3,3-1 KINII KOBENZENE	2.96		3.5	n	3.5	Ξ	0.353	Ξ	0300	· :	0.10	)
	2,4-DINITROTOLUENE	0.744	=	72	=		· :	70.0	> ;	0.352	>	0.352	Þ
	2.4.6.TRINITROTOL HENE		•	± /	>	4.1	>	0.744	<b>&gt;</b>	0.744	Þ	0.744	כ
	HW	OCT :		32,000		1,200		45		0.931	=	0 031	=
	nim .	42		58		7.6	ח	0.755	=	0.755	) <b>=</b>	167.0	•
	KDX	210		1.600		77	=	-	)	6000	<b>)</b>	0.733	)
METALS	ALUMINUM	2		1			>	1.19		0.445	D	0.445	D
	APSENIC	<b>E</b> ;	;	Y.		Y Z		NA		×z		Y	
	Chicken	54	>	240	Þ	74	Ω	24	n	24	11		<b>-</b>
	BARIUM	89		001		39		48		œ V	<b>,</b>	; ;	>
	CADMIUM	4.2	n	4.2	ח	0.424	Ξ	0.424	=	97	:	70	
	CALCIUM	X		V N		412	)	77.0	>	0.424	>	0.424	)
•	CHROMIUM	7				¥ 1		YZ Z		۲×		Ϋ́Z	
	COBALT	ŧ :		47.3		7.1		8.76		7.42		7.67	
	CODVE	YZ YZ		Š		Ϋ́		ΥN		X		Ž	
	COPPER	38		74		30		11.9		75 9		771	
	IRON	46,000		65,000		8,000		0 VDV		6		5.33	
	LEAD	66		5		20010		0,40		8,900		9,900	
	MAGNESIUM	N N		3 ;		<u>c</u>		19		10		9.2	
	MANGANEGE	<u> </u>		<b>Y</b>		¥		ž		Ϋ́Z		×z	
	MORE	NA		٧×		Ϋ́		Ϋ́		Ϋ́Z		<b>V</b>	
	NICKEL	130		1.61		2.46	ב	2.46	11	2 46	=	777	:
	POTASSIUM	ΥN		Ν		N		Z	ì	2 4 7	>	04.7	)
	SILVER	0.0848		0.16		0110				Y 1		Z Z	
	SODIUM	Z		A IV				0.234		0.0336		0.0335	
	VANADIUM	<b>.</b> 2		<b>V X</b>		¥ ;		Ϋ́χ		Ϋ́		Ν	
	ZINC			¥ .		Y Z		ΑN		Ϋ́Z		ź	
		820		Ş		47		75		5			

Summary of Analytes Detected in Soil for the Building 1303 Washout Pond (SWMU 22)

Surface Soil (continued)

Group	Analytes	BWS-92-07 0.5 ft	BWS-92-08		BWS-92-09	BWS-92-10	-10	BWB-94-01A	<u> </u>	BWB-94-02A	-02A
			11 6.0	0	0.5 11	0.5 ft		0.5 ณ		0.5 ft	سر
CYANIDE	CYANIDE	5	•		:	•	;				
ANIONS	NITRATE	88 €		ָר ,	>	n	D	0.25	Þ	0.3	
	NITRITE	9.00	2.33	2.62		2.56		٧٧		X	
EXPLOSIVES.	1 2 & TDINITEOPENIZES	3.10	3.16	J 3.16	n	3.16	n	NA A		Ž	
	1,3,3-1 KINI KOBENZENE	0.352 U	0.352	J 0.35	11	0.352	=		:	ξ	
	2,4-DINITROTOLUENE	0.744 U	0.744	1 0 74	) <del>-</del>	3000	<b>:</b>	0.922	<b>)</b>	2.96	
	2,4,6-TRINITROTOLUENE	0.931			• :	0.744	<b>&gt;</b>	2.5	Þ	3.53	
	HMX	1660	7.11	0.93	<b>-</b>	0.931	Þ	6.4		1500	
	AUG	0.735	0.755	J 0.75	۲ د	0.755	n	22.2		30 P	
METALS	AT INCOME.	0.445 U	0.445	) 0.44	D :	0.445	ם	40.6		73.4	
	ALUMINUM	٧X	Y'N	X		2	)	200		4.5.4	;
	ARSENIC	24 U	74 1	76	:		;	070,		1,220	D
	BARIUM		; \$	<del>•</del> 7	>	54	0	4.61		4.58	
	CADMIIM		80	67		92		58.9		10.7	Ξ
	CALCHINA	0.474 U	0.424 U	0.424	D _	0.424	ם		=	-	:
	CALCIUM	NA	٧X	NA		YZ	,		•	7.1	)
	CHROMIUM	7.98	8.16	8 63				OIC.		2160	
	COBALT	NA	V	21.0		C. K		17.6		36.2	
•	COPPER	\$ 78	5 6	NA		Y Z		16.8		2.78	
	NORI	97.5	0.73	5.56		6.05		18.2		7.5	
	LEAD	0,600	10,000	006'6	_	11,000		17,900		8 880	
	MAGNECITIM	₹ ;	91	11		13		28.5		43.1	
	MANGANESE	Y :	NA NA	Y N		٧×		2180		1410	
	NICERIA		YZ	YZ Z		٧X		326		300	:
	NICKEL	2.46 U	2.46 U	2.46	=	2 46	=	200		6.07	>
	POTASSIUM	¥Z	Y Z	V.V.	)	2	>	10.3		6.93	
	SILVER	0.0327	1000	VAI 0		<b>&lt;</b> 2		2930		1190	
	Sobjum	V.032/	1670.0	0.0336		0.0259		0.803	_	0.803	ם
	VANADIUM	V V	<b>X</b> ;	¥Z		۷×		167		97.1	)
	ZINZ	¥ ;	YZ Z	Y X		٧X		3.74	_	3 74	=
		36	35	31		39		369		92 X	>

Summary of Analytes Detected in Soil for the Building 1303 Washout Pond (SWMU 22)

Surface Soil (continued)

CYANIDE         O.5S         SR	2		BWB-94-03A	1-03A	BWS-94-01	4-01	BWS-94-02	94-02	BWS-94-03	4.03	RWC 04 04	70	O POSTAGE	1
NITRATE   NA	dnois	Analytes	0.5	ایے	.5 [	_	5.	2	.5.	}	.5 R	5	BWS-94	50-4
CAMDINE   CAZANDE   CAZA	CVANIDE													
VES         11/3 FATE         NA	CIANIDE	CYANIDE	0.25	D	0.25		30.0	=		:				
VES         1,1,5-TRINITROBENZENE         NA         NA<	ANIONS	NITRATE	474			•	0.23	>	0.75	<b>&gt;</b>	0.25	Þ	0.25	=
VES         1,3,5TRITROBENZENE         NA         NA <td></td> <td>THOLIN</td> <td><u>V.</u></td> <td></td> <td>ď Z</td> <td></td> <td>Y X</td> <td></td> <td>ΥZ</td> <td></td> <td>AN</td> <td></td> <td>Y</td> <td>1</td>		THOLIN	<u>V.</u>		ď Z		Y X		ΥZ		AN		Y	1
Very   1.3,5-Trinitroberizene   0.922   U   U   U   U   U   U   U   U   U		MINIE	Y Y		×Z		Ž		Y IV				2	
2,4-DINITROTOLUBNE         2,52         0,522         0         0,922         0         0,922         0         0,922         0         0,922         0         0,922         0         0,922         0         0,922         0         0,922         0         0,922         0         0         2         0         2.5	EXPLOSIVES	1,3,5-TRINITROBENZENE	0 00	=	5	:	17.7	į	<b>X</b>		Y.		YZ	
Actional Colored   2.5   U   2.5		2 A. DINITEOTOT HENE	77.0	> ;	0.922	>	0.922	D	0.922	n	0.922		0 00	-
2.4 G-TRINITROTOLUENE         7.05         2         0         2.5         0         1.28         0         1.28         0         1.28         0         1.28         0		2,4-DIMITROLOCUENE	2.5	Þ	2.5	ב	25	-	9 (	:		) ;	0.744	>
HMX		2,4,6-TRINITROTOLUENE	7.05		,	:	<u>.</u>	<b>)</b> ;	7.7	Ç	2.5	Þ	2.5	⊃
ALUMINUM		HMY	3	;	7	0	7	<b>5</b>	7	ב	7	=	·	1
ALDMA         1.28         U         1.29         U		Ville	2	<b>&gt;</b>	7	ב	7	Ω	,	=		) <b>:</b>	4 (	)
ALUMINUM         6,440         7.77         7.28         7.28         0         1.28         U         1.2		KDX	1.28	<b>-</b>	1 28	11	1 30	:		<b>)</b>	7	>	7	)
ARSENIC         9,440         4,710         6,390         5,480         6,020         5,030           BARIUM         10.7         U         4,88         4,47         4,24         3.69         3.02           CADMIUM         1.2         U	METALS	ALUMINIM	6 440	)	04.4	>	1.20	<b>5</b>	1.28	Þ	1.28	n	1.28	=
NESTURN   1.55   4.88   4.47   4.24   3.02   3.02     NIOM   10.7   U   49.9   66   49.5   55.7   5.2     NIOM   1.2   U   1.2   U   1.2   U   1.2   U   1.2   U   1.2     S.360   20,400   2,700   18,000   13,600   5,860     S.37   3.38   2.94   3.09   3.24     S.51   3.27   3.38   2.94   3.09   3.24     S.52   3.27   3.38   2.94   3.09   3.24     S.53   3.27   3.38   2.94   3.09   3.24     S.54   3.27   3.38   2.94   3.09   3.24     S.55   3.27   3.38   2.94   3.09   3.24     S.51   3.3   2.94   3.09   3.24     S.52   3.40   2,800   2,980   3,100   2,630     S.53   3.40   3.40   2,800   3,100   2,630     S.54   3.19   3.04     S.55   3.68   4.26   2,980   3,100   2,630     S.55   3.68   4.26   3.24   3.19   3.04     S.55   3.68   4.26   2,060   1,610   1,310     S.55   3.68   3.24   3.19   3.04     S.55   3.68   3.24   3.24   3.19   3.04     S.55   3.24   3.24   3.24   3.24   3.24   3.24     S.55   3.24   3.24   3.24   3.24		A Designation	0,440		4,710		6,390		5.480		6 020		6.030	)
IUM         10.7         U         49.9         4.24         3.69         3.02           MIUM         1.2         U		ARSENIC	3.55		4 88		1 17				07010		2,030	
MIUNIM         1.0.7         0         49.9         66         49.5         55.7         52           CUUM         1.2         U         1.2         U         1.2         U         1.2         U         1.2           CUUM         5,360         20,460         2,700         18,000         13,600         5,860           ALT         4.59         3.27         3.38         2.94         3.09         3.24           ALT         8.63         12.6         6.65         10.4         10.6         8.24           PER         8.63         12.6         6.65         10.4         10.6         8.24           NESIUM         1,730         U         8,740         9,010         8,040         8,600         7,610           NESIUM         1,910         2,840         2,500         2,980         3,100         2,630           GANESE         5         3.68         4.26         3.24         3.19         3.04           ASSIUM         1,410         1,270         1,660         2,060         1,610         1,310           SSIUM         0.803         U         0.803         U         0.803         U         0.803         U		BARITIM	5	:	2		÷		4.74		3.69		3.02	
1.2		CADAMINA	10.7	>	49.9		99		49.5		55.7		<b>1</b>	
CIUM         5,360         20,400         2,700         18,000         13,600         5,860           OMIUM         13.9         10.1         6.96         8.37         8         5.34           ALT         4.59         3.27         3.38         2.94         3.09         5.360           ALT         4.59         12.6         6.65         10.4         10.6         8.24           PER         8.63         12.6         6.65         10.4         10.6         8.24           1         1,730         U         8,740         9,010         8,040         8,600         7,610           NESIUM         1,910         2,840         2,500         2,980         3,100         2,630           GANESE         28.5         U         162         2,500         2,980         3,100         2,630           EL         5         3.68         4.26         3.24         3.19         3.04           SSIUM         1,410         1,270         1,660         2,600         1,610         1,310           SR         0.803         U         0.803         U         2,63         0.803         U         0.803           UM         0.		CADMIUM	1.2	ב	1.2	D	1.2		1.2	=	-	;	75	1
OMIUM         13.9         10.1         6.96         8.37         8         5.860           ALT         4.59         3.27         3.38         2.94         3.09         5.34           PER         8.63         12.6         6.65         10.4         10.6         8.24           1         1,730         U         8,740         9,010         8,640         8,600         7,610           NESIUM         1,910         2,840         2,500         2,980         3,100         2,630           GANESE         28.5         U         162         214         166         192         180           EL         5         3.68         4.26         3.24         3.19         3.04           ASSIUM         1,410         1,270         1,660         2,600         1,610         1,310           BR         0.803         U         0.803         U         2,63         0.803         U         0.803           UM         96.6         164         132         138         148         174           A5.6         57.4         27.1         27.1         50.8         9.35         8.49		CALCIUM	5.360		20 400		202.		3:1	)	7.1	>	1.2	)
ALT 4.59 10.1 6.96 8.37 8 5.34  PER 8.63 1.2.6 6.65 10.4 10.6 9.09 3.24  1 1,730 U 8,740 9,010 8,040 8,600 7,610  NESIUM 1,910 2,840 2,500 2,980 3,100 2,630  EL 5 3.68 4.26 3.24 3.19 3.04  SSIUM 1,410 1,270 1,660 2,060 1,610 1,310  UM 96.6 164 132 138 148 174  VINION 3.74 U 1.56 U 9.16 9.23 9.35 8.49		CHROMIUM	13.0		201.01		7,100		18,000		13,600		5.860	
4.59         3.27         3.38         2.94         3.09         3.24           1         8.63         12.6         6.65         10.4         10.6         8.24           1         1,730         U         8,740         9,010         8,040         8,600         7,610           NESIUM         1,910         2,840         2,500         2,980         3,100         2,630           GANESE         28.5         U         162         214         166         192         180           SSIUM         1,410         1,270         1,660         2,060         1,610         1,310           SR         0.803         U         0.803         U         0.803         U         0.803           UM         96.6         164         132         138         148         174           A5.6         57.4         27.1         50.8         9.35         8.49		COBAIT	6.61		10.1		96.9		8.37		00		2 34	
PER         8.63         12.6         6.65         10.4         5.09         3.24           1         1,730         U         8,740         9,010         8,040         8,660         7,610           NESTUM         13.1         45.8         10.1         31.5         29.1         15.2           GANESE         28.5         U         162         214         166         192         180           EL         5         3.68         4.26         3.24         3.19         3.04           SSIUM         1,410         1,270         1,660         2,060         1,610         1,310           SR         0.803         U         0.803         U         0.803         U         0.803           UM         96.6         164         132         138         148         174           A5.6         57.4         27.1         50.8         9.35         8.49		COBALI	4.59		3.27		3.38		2 04				,	
1.730 U 8,740 9,010 8,040 8,600 7,610     1.730 U 8,740 9,010 8,040 8,600 7,610     1.731		COPPER	8 63		12.6				4.34		3.09		3.24	
J., 30         B,740         9,010         8,040         8,600         7,610           NESTUM         13.1         45.8         10.1         31.5         29.1         15.2           GANESE         2,840         2,500         2,980         3,100         2,630           EL         5         3.68         4.26         192         180           SSIUM         1,410         1,270         1,660         2,060         1,610         1,310           UM         96.6         164         132         138         148         174           MDIUM         3.74         U 1,56         9.16         9.23         9.35         8.49		IRON	62.5	:	12.0		0.65		10.4		10.6		8.24	
13.1   45.8   10.1   31.5   29.1   15.2     NESTUM   1,910   2,840   2,500   2,980   3,100   2,630     EL		1547	1,730	>	8,740		9,010		8,040		8.600		7.610	
NESIUM 1,910 2,840 2,500 2,980 3,100 2,630 C.630		ava a	13.1		45.8		10.1		31.5		100		010.	
GANESE         28.5         U         162         2.70         2,980         3,100         2,630           EL         5         3.68         4.26         3.24         3.19         180           ASSIUM         1,410         1,270         1,660         2,060         1,610         1,310           ER         0.803         U         0.803         U         2.63         0.803         U         0.803           UM         96.6         164         132         138         148         174           A5.6         57.4         27.1         50.8         9.35         8.49		MAGNESIUM	1,910		2.840		2 600				1.67		15.2	
EL 5.5 0 102 114 166 192 180 180 180 180 180 180 180 180 180 180		MANGANESE	28.5	11			4,500		7,980		3,100		2,630	
SSIUM  1,410  1,270  1,660  2,060  1,610  1,310  3.04		NICKEI	.04	>	701		214		166		192		180	
ADDIUM 1,410 1,270 1,660 2,060 1,610 1,310		DOTAGETTA	n		3.68		4.26		3.24		3 10		2	
ADIUM 0.803 U 0.803 U 2.63 0.803 U 0.8		FULASSIUM	1,410		1,270		1,660		2.060		1 610			
UM 96.6 164 132 2.63 0.803 U 0.803  ADIUM 3.74 U 1.56 U 9.16 9.23 9.35 8.49		SILVER	0.803	n	0.803	Ξ	0 803		2001		1,010		1,310	
ADIUM 3.74 U 1.56 U 9.16 9.23 9.35 45.6 57.4 27.1 50.8		SODIUM	y y0		55:	>	0.00		7.03		0.803	D	0.803	n
45.6 U 9.16 9.23 9.35		VANADITIM	0.00	;	104		132		138		148		174	
45.6 57.4 27.1 50.8		MOLONIC	3.74	<b>-</b>	1.56	n	9.16		9.23		9.35		07 0	
		CINC	45.6		57.4		1 77		80.8				0.43	

Summary of Analytes Detected in Soil for the Building 1303 Washout Pond (SWMU 22)

Surface Soil (continued)

ţ		BWS-94-06	90-1	BWS-94-07	1-07	BWS-94-08	80-1	BWS-94-09	-00	BWS-94-09	1-00	RWS.04.10	110
Group	Analytes	ก.5 ก		.5 ft		0.5 ณ		0.5 R	<u>.</u>	0.5 ft (dup)	(an	0.50	
										**	/d	6:0	
CYANIDE	CYANIDE	0.25	ם	0.25	Ω	0.25	=	0.05	=	36.0	ï		:
ANIONS	NITRATE	YX		X		Z	)	( Y V	>	C7:0	>	0.23	>
	NITRITE	X		¥2		<b>.</b> .		ξ <u>7</u>		Ψ.:		Ž :	
EXPLOSIVES	1.3.5.TRINITROBENZENE		:	3757	:	771	i	ď.		<b>Y</b> Z		Y Z	
	2 4 Divitance of France	0.922	<b>)</b>	0.922	<b>-</b>	0.922	Þ	0.922	D	0.922	n	0.922	ם
	2,4-DIMITROLOCUENE	2.5	>	2.5	n	. 2.5	n	2.5	n	2.5	=	2.5	=
	2,4,6-TRINITROTOLUENE	7	n	7	n	7	n	7	=	,	) <b>=</b>	;	2
	HMX	2	Ω	7	n	2	ם	7	- <b>=</b>	, ,	> =	۹ (	) <b>:</b>
	RDX	1.28	n	1.28	ם	1.28	=	1 28	> =	, ,	> =	7 .	<b>)</b> :
METALS	ALUMINUM	4 730		\$ 250		7 600	)	07:1	)	07.1	>	1.28	>
	ADGENIC	2000		0,430		0,200		2,060		6,060		6,380	
	ANGELIA	3.27		3.5		3.7		3.78		4.18		3.31	
	BARIUM	47.5	•	46.1		67.9		48.4		55.4		\$7.8	
	CADMIUM	1.2	ם	1.2	D	1.2	Ω	1.2	n	1.2	=		-
	CALCIUM	2,990		3,380		6,800		3.030	,	3.240	•	1.4 0,00	>
	CHROMIUM	5.82		5.95		7.22		5.44		27.8		7 76	
	COBALT	3.08		3.72		3.68		3 02		308		Ç.,	
	COPPER	9.11		5.62		8.26		20 0 0 48		0.20		÷ 6	
	IRON	7 200		7 600				01.7		0.73		67.7	
	IHAD	0.24		0,0%		050,6		7,700		8,340		9,320	
		19.3		y.64		14.2		18.7		54.7		8.94	
	MAGNESIOM	2,050		1,970		2,810		2,100		2,340		2,350	
	MANGANESE	168		153		202		156		172		178	
	NICKEL	2.79		2.74	ם	3.69		2.74	=	185		0/1	
	POTASSIUM	1,300		1,340		1.740		1.260	,	1 510		5.5	
	SILVER	0.803	D	0.803	=	0 803	=	0 803	=	0.00	:	1,100	:
	SODIUM	156		111	1	150	>	200.0	>	0.003	)	0.803	<b>-</b>
	VANADIUM	1.56	=	8 12		090		3 5	=	60.0		120	
	ZINC	0 ( (	,			7.07		1.30	<b>-</b>	8.52		10.7	
		0.77		41.4		32.4		34.9		106		25.9	

Summary of Analytes Detected in Soil for the Building 1303 Washout Pond (SWMU 22)

# Surface Soil (continued)

CYANIDE	Analytes	0.5 R	<b>.</b>	BWS-94-12 0.5 R	71-1	BWS-94-13	4-13	BWS-94-14	4-14	BWS-94-15	4-15	BWS-94-16	4-16
CYANIDE						200		0.5 11		0.5 ก		0.5 ณ	=
	CYANIDE	0.25	=	0.25	=	200			į				
ANIONS	NITRATE	N.A.	)		>	0.23	>	0.25	)	0.25	Þ	0.25	ח
	NITRITE			Y :		X X		Ϋ́		ΥN		N	
EXPLOSIVES	1 2 C TRIMITACATING	Y Y		۷ ۷		٧X		NA NA		AX		Z	
	1,3,3-1 KINII KOBENZENE	0.922	ם	0.922	ם	0.922	=	0 077	=	,,,,	:		;
	2,4-DINITROTOLUENE	2.5	ב	2.5	Ξ	3 6		77(1)	· :	0.922	>	0.922	0
	2,4,6-TRINITROTOLUENE	,	· =	;	· :	c. <sub>2</sub>		7.5	)	2.5	n	2.5	כ
	UMV	7	>	7	>	7		7	Þ	2	=	c	=
	Ville	2	ם	7	D	7	Ω	,	-	, ,	) =	4 (	<b>:</b>
	KDX	1.28	n	1.28	=	1 28			· :	7	<b>&gt;</b> ;	7	>
METALS	ALUMINUM	5 510		4	)	07:7		1.28	)	1.28	<b>D</b>	1.28	Þ
	CINENA	2000		0,400		6,170		5,040		5,410		5.450	
		3.73		4.28		3.46		3.97		3.7		7 6.0	
	BARIUM	47.8		58.1		58.5		24 3				10.4	
	CADMIUM	1.54		1.2	=	-			:	49.1		52.9	
	CALCIUM	7 350		7:1	>	1.6	>	1.2	)	1.2	Þ	1.2	Þ
	CHROWIIN	000,2		4,970		22,700		26,600		11,900		3.750	
	COBALT	16.7		8.82		14.8		7.03		7.02		7. 7	
	COBACI	3.77		3.29		3.4		3.12		2 78			
	COPPER	8.05		11		16.5		-		5.70		3.08	
	IRON	8 650		000 01		6.01		9.1		9.81		10.2	
	LEAD	3 61		10,000		8,940		6,970		7,310		7.890	
	MAGNEGITIM	12.3		36.1		77.5		16.9		22.3		216	
	MANGANESH	2,040		2,720		3,580		3,410		2.650		2 330	
	MAINGAINESE	152		189		195		151		181		0001	
	NICKEL	3.22		4.5		VL P		10.0		101		1/3	
	POTASSIUM	1 270		37.				3.34		3.39		3.61	
	SILVER	0.6.	=	0,400	;	1,630		1,410		1,370		1,440	
	SODIIIM	0.903	<b>5</b>	0.803	<b>-</b>	0.803	ם	0.803	n	0.803	Ω	0.803	=
	VANADITM	1113		140		153		133		140		140	)
	NO CONTRACTOR OF THE CONTRACTO	9.78		9.32		9.65		8.16		8.07		21.8	
	CHINC	29.3		94		76.1		31.9		20.0			

Summary of Analytes Detected in Soil for the Building 1303 Washout Pond (SWMU 22)

# Surface Soil (continued)

		1 Y-4-C-5 11 CI	
Group	Analytes	0.5 R	
CYANIDE	CYANIDE	30.0	
ANIONS	NITRATE	C.2.0	
	NITRITE	¥ Z	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	n
	2,4-DINITROTOLUENE	2.5	n
	2,4,6-TRINITROTOLUENE	2	n
	HMX	7	n
	RDX	1.28	n
METALS	ALUMINUM	6,320	-
	ARSENIC	5.54	
	BARIUM	51.6	
	CADMIUM	1.2	
	CALCIUM	2,620	
	CHROMIUM	7.49	
	COBALT	3.11	
	COPPER	7.82	
	IRON	8,490	
	LEAD	13.3	
	MAGNESIUM	2,320	
	MANGANESE	165	
	NICKEL	3.45	
	POTASSIUM	1,540	
	SILVER	0.803	Ω
	SODIUM	109	
	VANADIUM	9.46	
	CNIC	ç	

Summary of Analytes Detected in Soil for the Building 1303 Washout Pond (SWMU 22)

### Subsurface Soil

Group	Analytes	BWB-94-01B 4 ft	BWB-94-01C 10 R	BWB-94-02B 4 ft	BWB-94-02C 10 ft	BWB-94-03B	BWB	BWB-94-03C
EXPLOSIVES	2,4,6-TRINITROTOLUENE	4.47	2 U	65.7		8		
	RDX	2.18	1.28 U	1.82	1.28 11	1.09	7 [	) : 
METALS	ARSENIC	4.7	2.5 U	2.93	2.5 U	96 €	97.1	o
	BARIUM	54.5	66.4	10.7 U	10.7	10.7		
	CALCIUM	42,800	28,000	27,000	24.100	14 500	2 5	>
	CHROMIUM	56.9	26.2	54.9	24.6	7 07	M,12	2
	COBALT	3.05	3.45	2.5 U	4.14	7.57	יי זי	=
	COPPER	4.81	4.89	3.3	6.86	C 57 F	C.2	) -
	IRON	1,730 U	1,730 U	1.730 11	0990	1.057	4.4	
	LEAD	8 13	7.44 11		2004	0 067,1	1,/3	<b>-</b>
	MAGNECITIM	61.0	0 ++	0 44.	10.4	7.44 U	7.4	ב
	MANCANIEE	3,400	1,470	1,870	3,200	1,230	3.09	0
	MANAGARESE	184	28.5 U	28.5 U	28.5 U	28.5 U	28.5	=
	MERCURY	0.0754	0.05 U	0.05 U	0.05 U	0.05	50.0	) =
	NICKEL	10.6	6.07	3.99	12.2	4.65	6.67	
	POTASSIUM	1,280	235 U	235 U	235 U	235 11	735	=
	SODIUM	178	210	104	194	67	6.2	>
	VANADIUM	3.74 U	33.6	3.74	17.72		4.50	:
All materials and the contract of the					21.1	f 1.17	3.74	_

All values are in µg/g (equal to ppm)

NA = Not analyzed

U = Not detected; value is the Certified Reporting Limit
Dup = Duplicate analysis
J = Value is estimated.

Summary of Analytes Detected in Soil for the Bomb and Shell Reconditioning Building (SWMU 23)

Building 1343 Outfall - Surface Soil

Analytes 0.5 ft    NA   8090			BRB-94-12A	12A	BRD-92-01	10-	BRS-92	80-	BRS-92	60-	
NITRATE  ALUMINUM  ARSENIC  5.9  BARIUM  CALCIUM  COBALT  COPPER  IRON  LEAD  MAGNESIUM  MAGNESIUM  MANGANESE  MAGNESIUM  MANGANESE  MAGNESIUM  MACURY  NICKEL  POTASSIUM  SODIUM  SODIUM  SODIUM  SODIUM  SODIUM  BENZYL ALCOHOL  DIMETHYL PHTHALATE  0.23  0.0479  0.066		Analytes	0.5 ft		O ft		n 0		0 ft	}	
NITRATE       NA         ALUMINUM       8090         ARSENIC       5.9         BARIUM       95.6         CALCIUM       69000         CHROMIUM       23.1         COBALT       3.74         COPPER       16.7         IRON       12200         LEAD       24.3         MAGNESIUM       4490         MANGANESE       248         MANGANESE       0.61       U         NICKEL       8.42         POTASSIUM       2240       SILVER         SODIUM       332         ZINC       48.1         PCB 1254       0.0479       U         BENZYL ALCOHOL       0.06         BUTYLBENZYL PHTHALATE       1.8       U         DIMETHYL PHTHALATE       0.23											
ALUMINUM ARSENIC 5.9 BARIUM CALCIUM 69000 CHROMIUM 23.1 COBALT COBALT COPER IRON LEAD LEAD AAGNESIUM AAGNESE MAGNESE MARGANESE	NITRATI	m	Y.		3.36	=	5 11		¢ 00		
ARSENIC 5.9 BARIUM 69000 CHROMIUM 69000 CHROMIUM 23.1 COBALT 3.74 COPPER 16.7 IRON 12200 LEAD 24.3 MAGNESIUM 4490 MANGANESE 248 MERCURY 0.61 U NICKEL 8.42 POTASSIUM 2240 SILVER 0.803 U SODIUM 332 ZINC 48.1 PCB 1254 0.0479 U BENZYL ALCOHOL 0.06 BUTYLBENZYL PHTHALATE 1.8 U	ALLIMIN	IIIV	0000			•	7.17		7.26		
AKSENIC AKSENIC AKSENIC BARIUM BARIUM CORDALT COBALT COPPER IRON LEAD MAGNESIUM AAGNESIUM MANGANESE MARCURY NICKEL POTASSIUM SILVER SODIUM SODIUM SODIUM SODIUM BENZYL ALCOHOL DIMETHYL PHTHALATE 0.23 0.0479 0.066	THE COLUMN		0600		Z V		Y V		Y Z		
BARIUM  CALCIUM  CALCIUM  COBALT  COBALT  COBALT  COBALT  IGO  ILEAD  ILEAD  MAGNESIUM  MANGANESE  MERCURY  NICKEL  POTASSIUM  SILVER  SODIUM  SILVER  COPPER  12200  24.3  4490  MANGANESE  MAGNESIUM  MANGANESE  MERCURY  MAGNESIUM  SILVER  SODIUM  SILVER  COMPTO O.06  BENZYL ALCOHOL  DIMETHYL PHTHALATE  0.23	AKSENIC	• •	5.9		48	Þ	48	ב	48	Ω	
CALCIUM CALCIUM CHROMIUM 23.1 COBALT COBALT COPER IRON LEAD LEAD MAGNESIUM MAGNESE MARGANESE MARGANESE MARGANESE MARGURY NICKEL POTASSIUM SILVER SODIUM SILVER COPPER 12200 24.3 4490 MANGANESE 0.61 U NICKEL R42 POTASSIUM SILVER SODIUM 332 ZINC PCB 1254 0.0479 U BENZYL ALCOHOL DIMETHYL PHTHALATE 0.23	BARIUM		92.6		130		120		9	)	
CHROMIUM COBALT COBALT COPER IRON LEAD MAGNESIUM MAGNESIUM ANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM SILVER CSODIUM SODIUM SODIUM BENZYL ALCOHOL DIMETHYL PHTHALATE 0.23	CALCIU	>	00069		Ϋ́		X		2		
COBALT       3.74         COPPER       16.7         IRON       12200         LEAD       24.3         MAGNESIUM       4490         MANGANESE       248         MANGANESE       248         MERCURY       0.61       U         NICKEL       8.42         POTASSIUM       2240         SILVER       0.803       U         SODIUM       332         ZINC       48.1         PCB 1254       0.0479       U         BENZYL ALCOHOL       0.06         BUTYLBENZYL PHTHALATE       1.8       U         DIMETHYL PHTHALATE       0.23	CHROMI	UM	23.1		17		13		2		
COPPER IRON ILEAD LEAD AAGNESIUM AAGNESE MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM SODIUM SODIUM TO SODIUM BENZYL ALCOHOL DIMETHYL PHTHALATE 1.8 12200 2449 6.61 0.61 0.61 0.61 0.61 0.61 0.61 0.61	COBALT		3.74		X		ž		Z Z		
IRON   12200   12200   LEAD   24.3   4490	COPPER		16.7		170		99		5		
LEAD MAGNESIUM MAGNESE MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM SODIUM SODIUM TO SODIUM SODIUM BENZYL ALCOHOL DIMETHYL PHTHALATE 0.23	IRON		12200		28000		13000				
MAGNESIUM MANGANESE MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM SODIUM SODIUM THO PCB 1254 BENZYL ALCOHOL DIMETHYL PHTHALATE 0.23	LEAD		243		6		3		2007		
MANGANESIUM MANGANESE  MANGANESE  MERCURY  0.61  U NICKEL  8.42  8.42  POTASSIUM  SILVER  SODIUM  SODIUM  SODIUM  SODIUM  BENZYL ALCOHOL  DIMETHYL PHTHALATE  0.03  0.06	STING VI	7 11 11	C.+.7		8		67		9		
MANGANESE  MARCURY  NICKEL  POTASSIUM  SILVER  SODIUM  SODIUM  BENZYL ALCOHOL  DIMETHYL PHTHALATE  248  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.42  8.40  9.80  9.0479  9.06  9.06  9.079	MAGNES	MOIS	4490		YZ.		٧X		Ϋ́		
MERCURY  NICKEL  8.42  POTASSIUM  SILVER  SODIUM  332  ZINC  PCB 1254  BENZYL ALCOHOL  DIMETHYL PHTHALATE  0.03  0.05	MANGAL	VESE	248		¥Z		Y'N		¥Z		
NICKEL 8.42 POTASSIUM 2240 SILVER 0.803 U ( SODIUM 332 ZINC 48.1 PCB 1254 BENZYL ALCOHOL 0.066 BUTYLBENZYL PHTHALATE 1.8 U	MERCUR	λ:	0.61	n	0.145		0.0915		0.199		
POTASSIUM  SILVER  SILVER  0.803 U  CODIUM  332  ZINC  PCB 1254  BENZYL ALCOHOL  BUTYLBENZYL PHTHALATE  0.06  DIMETHYL PHTHALATE  0.23	NICKEL		8.42		00		4.0	=	4 0	=	
SILVER SODIUM 332 ZINC A8.1 PCB 1254 0.0479 U BENZYL ALCOHOL BUTYLBENZYL PHTHALATE 1.8 U DIMETHYL PHTHALATE 0.23	POTASSI	UM	2240		Y.		Ž	)	. Z	•	
SODIUM         332           ZINC         48.1           PCB 1254         0.0479         U           BENZYL ALCOHOL         0.06         U           BUTYLBENZYL PHTHALATE         1.8         U           DIMETHYL PHTHALATE         0.23	SILVER		0.803	Ω	0.0293		~		0.115		
ZINC 48.1 PCB 1254 0.0479 U BENZYL ALCOHOL 0.06 BUTYLBENZYL PHTHALATE 1.8 U DIMETHYL PHTHALATE 0.23	SODIUM		332		NA VA		NA		Z Z		
PCB 1254         0.0479         U           BENZYL ALCOHOL         0.06           BUTYLBENZYL PHTHALATE         1.8         U           DIMETHYL PHTHALATE         0.23			48.1		280		240		460		
BENZYL ALCOHOL  BUTYLBENZYL PHTHALATE  1.8  U DIMETHYL PHTHALATE  0.23	_		0.0479	Ω	Ž		Z		2		
SNZYL PHTHALATE 1.8 U YL PHTHALATE 0.23		ALCOHOL	90.0		99 0	111	9 9	111	990	=	
YL PHTHALATE 0.23	BUTYLBI	<b>ENZYL PHTHALATE</b>	8.1	Ω	0.47	;	9	3 =	0.00	) <u> </u>	
	DIMETH	YL PHTHALATE	0.23		.99.0	n	9.9	; =	0.66	3 =	
0.32 UJ	PCB 1254		0.32	5	0.646		X	)	S Z		

Summary of Analytes Detected in Soil for the Bomb and Shell Reconditioning Building (SWMU 23)

Building 1343 Outfall - Subsurface Soil

dana	Analytes	BKB-94-12B 3 ft	BRB-94-12C 5 ft	BRB-94-16A	BRB-94-16B	BRB-94-17A	BRB-94-17B
					111 6	3.11	5 12
MEIALS	ALUMINUM	8180	11 0001	7,07	!		
	ARSENIC	20.5	0 0771	4080	857 U	857 U	857 11
	BABILIM	4.7	3.57	3.83	4.26	3.44	3 50
	MUNION	78.2	10.7 U	50.4	80.8		0.70
	CADMIUM	2.74	1 2		0.00	8.43 U	8.43 U
	CALCIUM	78800	7:1	0 7.1	1.2 U	1.2 U	1.2 U
	CHROMITIM	7.00W	13000	13100	36800	22600	24100
	CHINOMICA	24.6	14.3	14.7	23.8	2,75	27100
	COBALI	5.83	3.4	4.14	3 00	7.50	10.1
	COPPER	20.6	6.41	22.0	50.0	4.3/	2.93
	IRON	12000	14:0	٧./٧	5.38	9.36	68.9
	LEAD	13800	1730 U	7790	6820	0629	0859
		31	7.44 U	8.04	8.06	7.44	
	MAGNESIUM	4730	1540	2140	2370	0 44.7	/.44 U
	MANGANESE	224	78 5		0/00	1810	2750
	MERCURY	11 19 0	0 6.3	0 7.00	30.2 U	30.2 U	30.2 U
	NICKEL	20.0	0.01	0.0335	0.05 U	0.05 U	0.05
	POTASSITIM	00.00	3.9	7.74	5.74	7.55	5.71
	CII VER	0007	235 U	1170	207 U	207 1	207
	MILLOS	co.c	0.803 U	0.975	0.803 U	1.24	0 803
	VANAPHRA	445	283	241	225	781	50.5
	VANADIUM	23.8 J	3.74 UJ	18.9	16.9	100	8/7
	ZINC	44.9	0.69	24.7	2 55 11	19.7	77.1
SEMIVOLATILES	BIS (2-ETHYHEXYL) PHTHALATE	6.0	11 87 0		0 5.0	20.1	3.55 U
	FLUORANTHENE	0 032	0.40	0.48 U	0.48 U	0.48 U	0.48 U
CARCINOGENIC PAHS	_	0.035	0.032	0.032 U	0.032 U	0.16	0.054
	CHRYSENE	0.041	0.041 U :	0.041	0.041 U	0.14	0.041
	B(A)P-FOIIVALENTS	0 120	0.032 0	0.032 U	0.032 U	0.11	0.032
		0.128 U	0.128 U	0.128 U	0.128	0.014	0110

Summary of Analytes Detected in Soil for the Bomb and Shell Reconditioning Building (SWMU 23)

Building 1344 Outfall - Surface Soil

	Groun		BRB-94-11A	BRS-92-07	
	dana	Analytes	0.5 ft	0 18	
	METALS	ALUMINUM	5560	V.V.	
		ARSENIC	5.65	24 11	
		BARIUM	57.2		
		CADMIUM	2.66	1.82	
		CALCIUM	19100	N.	
		CHROMIUM	39.2	43.6	
		COBALT	3.45	₩.	
		COPPER	18.1	17.8	
		IRON	9850	8200	
		LEAD	115	100	
		MAGNESIUM	3120	S X	
		MANGANESE	169	· Z	
		NICKEL	7.64	3 65	
		POTASSIUM	1270	7.00 VIA	
		SILVER	0 803	בינט ע	
79		SODIUM		0.0/3/ NA	
2		VANADIUM	17.8	YY Y	
		ZINC	9.5	AN CONTRACTOR	
	PESTICIDES/PCBS	PCB 1254	0 0081	150	
	SEMIVOLATILES	ACENEPHTHENE	0.33		
		BENZO (G.H.II PERYLENE	6.6	0.2.0	
		FLUORANTHENE	7.7	D 2.5	
		FLUORENE	61.0	IO.4 U	
		PHENANTHRENE	2.13	0.0	
		PCB 1254	0.32	0.5.0 0.5.0	
				11 70	
	CARCINOGENIC PAHS	BENZO [A] ANTHRACENE	2.8	) +:o	
		BENZO [B] FLUORANTHENE	3.8	12 67	
		BENZO [K] FLUORANTHENE	1.4	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
		CHRYSENE	3.1	2 6	
		B(A)P-EQUIVALENTS	0.677	11 596 0	
				0 0000	

Summary of Analytes Detected in Soil for the Bomb and Shell Reconditioning Building (SWMU 23)

Building 1344 Outfall - Subsurface Soil

BRB-94-14B 5 ft	4 25	48500	42.4	2.5 U	4.94	1120 U	7.44 U	1710	0.05 U	6.13	249	21.2	3.55 U	0.041 U	0.032 U	0.032 U	0.083 U	0.041 U	0.31 U	0.13 U	0.032 U	0.128 U
BRB-94-14A 3 ft	4.15	39600	127	2.5 U	5.51	7240	8.67	2780	0.05 U	12.4	240	2.23 U	3.55 U	0.041 U	0.032 U	0.032 U	0.083 U	0.041 U	0.31 U	0.13 U	0.032 U	0.128 U
BRB-94-11C 5 ft	4.99	29100	36.3	2.5 U	5.98	6150	12.3	2430	0.0596	5.9	155	11.7	3.55 U	0.12	0.51	0.61	0.62	0.45	9.0	0.3	0.49	0.108
BRB-94-11B 3 ft	5.81	16300	537	3.81	8.11	11700	13.6	1280	0.05 15.0	8.61	134	18.2	19.6	0.041	7.0	0.18	87.0	0.21	0.31 0.13	0.13 0.33	0.23	0.021
Analytes	ARSENIC	CALCIUM	CHROMIUM	COBALI	IDON	TAA D	MAGNESHIM	MEDCIEV	NICKRI	SODIIM	VANADIIM	VAINC	ACENEDHTHENE	FLUORANTHRNE	PHENANTHRENE	PYRENE	BENZO (A) ANTIDA CENE	BRNZO (A) AN HINACENE	BENZO (K) EL CONAIN I DENE	CHRYSENE	B(A)P-FOIIIVALENTS	EVAL-EVOLVALEIVIS
Group	METALS												SEMIVOLATILES				CARCINOGENIC PAHS					
															7	Ω						

Summary of Analytes Detected in Soil for the Bomb and Shell Reconditioning Building (SWMU 23)

Building 1345 Outfall - Surface Soil

Č		DVD-74-10A		70-76-MYG	DKD-22-02	70-	BKP-94-06A	₩90	BRP-94-07A	RPP-04-08A	•
Group	Analytes	0.5 ft		0 ft (dup)	0 ft		0.5 ft		0.5 ft	0.5 ft	<u> </u>
ANIONS	THE A THE	;									
CVANIDE	MIKAIE	¥Z.		NA NA	7.27		٧X		Ϋ́	Ϋ́	
CIANIDE	CIANIDE	1.12		ΝΑ	41.1		0.25	<b>-</b>	0.25 11	1.71	
MEIALS	ALUMINUM	8820		NA	Ϋ́		0096	,	11100	17.1	_
	ARSENIC	4.19		NA	24	Ω	6.14		611	700 6	`
	BARIUM	84.5		AN	2	,	110				
	CADMIUM	5.08		Y Z	0 0		70.7			5.70	
	CALCIUM	7690			6.5		4.85		1.2 U	16.9	
	CUDOMIIM	000/		Y.	Y Y		39100		19800	12500	
	CINCINION	95		AA	470		36.8		36	79.4	
	COBALI	4.38		Y Y	Ϋ́N		4.49		5.08	3 40	
	COPPER	14.3		NA A	86		25.5		14.8	8 81	
	IRON	11900		NA	35000		17200		13300	0.01	
	LEAD	79.1		NA	860		99.3		\$16	250	
	MAGNESIUM	3750		NA	ΥN		6580		4360	3710	
	MANGANESE	30.2	n	Z,	NA		292		222	30.2	_
	NICKEL	7.51		Ϋ́	8.15		7.84	<b>-</b>	7.3	200.2	
	POTASSIUM	2100		NA	٧Z		2830	)	2690	200	_
	SILVER	0.803	Ω	NA A	0.81		0.803	=	0 803 11	0 80	
	SODIUM	227		NA	Y'N		208	i	293	157	
	VANADIUM	15.2		NA	Ϋ́		16.8		23.1 111	1.21	
and out of the same	ZINC	727		NA	1100		81.4		92.2	1.50	
resticides/rcbs	PCB 1248	0.1	ī	NA	5.2		Ϋ́		Y.	0.975	
CENTIVOI ATH BO	PCB 1254	0.235		. VN	Ϋ́		Ϋ́		NA N	0.0479	
SEIVII VOLA I ILES	2-METHYLNAPHTHALENE	0.032	<b>-</b>	NA A	99.0	n	0.032	n	0.032 U	0.032	
	ACENAPHINYLENE	0.033	<b>-</b>	Y Y	0.92	n	0.033	n	0.033 U		
	AVEILL A CENE	0.55		NA	0.427		0.041	n	0.12	0.041	
	ANIHKACENE	0.71	Þ	NA	1.08	n	0.71	Ω	0.71 U		
	BENZO [G,H,I] PERYLENE	99.0		NA A	0.427		0.38		0.18 U		
	DIS O PURINGENEES STATES	0.032	<b>&gt;</b>	ΝΑ	99.0	5	0.083		0.068		=
	BIS (2-ETHYHEXYL) PHTHALATE	0.48	⊃	Ϋ́	2.13		1.3		-		•
	DIBENZOFURAN	0.38	Þ	ΝΑ	99.0	ח	0.38	n	0.38	0.38	
	DIEIRIC FHIRALAIE	0.24	<b>D</b>	AA	99.0	n	0.24	n	0.24 11	0.24	
	DIMETHYL PHIHALATE	0.46		Ϋ́	99.0	Ð	0.13		0.063	0 14	
	DI-N-BOLLIC PHI HALATE	F	D	Y Y	99.0	ח	1.3	n	1.3 U	6	
	FLOOKANIAENE	1.5		Y Y	1.28		0.4		0.32	81.0	
	Y Z I Z I										

Summary of Analytes Detected in Soil for the Bomb and Shell Reconditioning Building (SWMU 23)

Building 1345 Outfall - Surface Soil (continued)

Group	Analytes	BRB-94-10A 0.5 ft	BRD-92-02 0 ft (dup)	BRD-92-02 0 ft	BRP-94-06A	BRP-94-07A	BRP-94-08A
			7		0.5 11	0.5 II	0.5 ft
SEMINOI ATH DO	DITTERIANTED						
CHILLD INC.	THENANIHKENE	2.3	ΥZ	1.21	70 0	97	•
	PCB 1248			7/-	0.30	0.42	0.18
	יייייייייייייייייייייייייייייייייייייי	0.32	Ϋ́Ζ	8.4	0.32 UJ		
	FCB 1234		Ϋ́Z	42	0.33		20:0
	PYRRNR						
A DOWNOCENITO DATE	DENIES CONTRACTOR OF THE PERSON OF THE PERSO	7	KZ KZ	2.13	0.94	0.56	0.41
ANCINCOLENIC FAHS	BENZO A ANTHRACENE	_	VΔ	730 0		0 !	1.0
	RENZO (A) DVDENE	. :		0.034	0.44	0.25	0.17
	Prince (a) I Inche	1.2 U	¥Z.	2.0	1.2 U	1.2	1.2
	BENZO IBI FLUORANTHENE	1.2	<b>*</b> Z			1	7.7
	BENZO (K) EI 1109 ANTUENE	1 6	<b>V</b> .	\$	0.7	0.31 U	0.31 U
	CHANGENE	0.38	NA V	1.6 U	0.27	0.13	0.13
	CHKISENE	1.2	ĄZ	1 0.1	200	)	0.11.0
	DIRENZ (AH) ANTUBACENE	:	V.	1.0/	0.85	0.35	0.28
	MEGIC [An] ANTINACENE	0.31 U	YY Y	0.4 U	0.31 U	0.31	0.31
	INDENO [1,2,3-C,D] PYRENE	2.4 U	NA	0.427	11 76	2 7 7 7	
	B(A)P-EQUIVALENTS	0.227	ĄZ			0 4.7	7.4 O
		122.0	5		×	2	

Summary of Analytes Detected in Soil for the Bomb and Shell Reconditioning Building (SWMU 23)

Building 1345 Outfall - Surface Soil (continued)

Group	Analytes	BRP-94-09A 0.5 ft (dup)	_ _	BRP-94-09A 0.5 ft	BRS-92-01 0 ft	2-01	BRS-94-06	90-1	
							2	•	
ANIONS	NITRATE	AN	_	Y.	3.36	Ω	Z		
CYANIDE	CYANIDE	13		13	3	=	0.25	=	
METALS	ALUMINUM	5440		220 U	Ž	)	0850	•	
	ARSENIC	3.27	9		240	=	86.4		
	BARIUM	126		126	260	)	2.5		
	CADMIUM	52.4		46	0 424	Ξ	2 2	per per	
	CALCIUM	27300	21	006	Ϋ́	•	8320	<b>o</b>	
	CHROMIUM	160	_	[63]	8		9.83		
	COBALT	10.5	_	0.2	Z		4 84		
	COPPER	73.4	S	9.8	19.3		0.73		
	IRON	20500	91	006	25000		12000		
	LEAD	292	4	69	130		9.84		
	MAGNESIUM	4010	ñ	650	AN		6470		
	MANGANESE	198		74	NA		396		
	NICKEL	16	-	2.4	2.46	Ω	5.76		
	POTASSIUM	1270	<b>∺</b>	300	YZ.	,	3080		
	SILVER	0.803	0.	803 U	0.179		0.803	n	
	SODIOM	226	7	37	YZ Z		352		
	VANADIOM	13.7	m	.74 UJ	Ϋ́Z		14.3		
ממטמוטווטווטמומ	ZINC	1050	=	010	2200		39.1		
resticides/rcbs	PCB 1248	34		83	NA		Y.		
CENTIVOI ATHE	PCB 1254	0.48	0	.48 ' U	Y.		NA		
SEIMITOLATILES	2-METHYLNAPHTHALENE	0.056	<u>0</u>	032 U	99.0	n	0.49		
	ACENAPHIHYLENE	0.033	<u>`</u>	033 U	0.92	Ω	0.085		
	ACENEPHIHENE	0.041	<u>.</u>	941 U	0.82	n	3.4		
	ANIHRACENE	0.71	о _	.71 U	1.08	n	3.6		
	BENZO [G,H,I] PERYLENE	0.37 J	0	.18 U	0.48	n	2.3		
	BENZYL ALCOHOL	0.032 L	<u>.</u>	0.032 U	99.0	IJ	0.032	=	
	BIS (2-ETHYHEXYL) PHTHALATE	7.2	3	.7	0.78	n	0.48	· =	
	DIBENZOFURAN	0.38	0	38 U	99.0	D	0.65	)	
	DIETHYL PHTHALATE	0.24 L	· •	24 U	99.0	n	0.53		
	DIMETHYL PHTHALATE	0.11	Ö	32	99.0	Ω	0.063	n	
	DI-IN-BOLLE PHIRALALE	1.5	-	.3 U	99.0		1.3	Ω	
	FLUORANI HENE			22	1.04	n	5.5		
	FLUORENE	2000							

Summary of Analytes Detected in Soil for the Bomb and Shell Reconditioning Building (SWMU 23)

Building 1345 Outfall - Surface Soil (continued)

BRS-94-06	9.5 0.32 UJ 0.32 UJ 10 5.3 4.7 5.6 5.4	0.58 2.4 U 6.399
BRS-92-01 0 ft	0.82 U NA NA 0.84 U 0.6 U 0.76 U 0.72 U 1.6 U	0.42 U 0.096 U
BRP-94-09A 0.5 ft	0.18 0.32 UJ 0.32 UJ 0.42 0.28 1.2 U 0.31 U 0.13 U	2.4 U NA
BRP-94-09A 0.5 ft (dup)	0.3 0.32 UJ 0.32 UJ 0.38 0.35 1.2 U 0.73 0.33 UJ	2.4 U 0.112
Analytes	PHENANTHRENE PCB 1248 PCB 1254 PYRENE BENZO [A] ANTHRACENE BENZO [A] PYRENE BENZO [B] FLUORANTHENE BENZO [K] FLUORANTHENE CHRYSENE DIBENZ [AH] ANTHRACENE	INDENO [1,2,3-C,D] PYRENE B(A)P-EQUIVALENTS
Group	SEMIYOLATILES CARCINOGENIC PAHS	

Summary of Analytes Detected in Soil for the Bomb and Shell Reconditioning Building (SWMU 23)

Building 1345Outfall - Subsurface Soil

		BRB-94-10	)B	BRB-94-10C	دِ	BRB-94-15A	SA	BRR-94-15R	15R	RRP-04-06R		RDD 04 0KC	رير
Group	Analytes	3 ft		5 ft		3 ft		5 ft		3 ft		5 ft	2
METALS	ALUMINUM	857	=	250	-	230	=	č	;				
		3	•	6	<b>-</b>	65/	2	82/	>	<b>6</b> 770		1170	⊃
	ARSENIC	5.91		3.32		4.57		3.01		8.21		5 23	
	BARIUM	8.43	n	8.43	n	46.3		8 43	=	0 75		10.5	=
	CALCIUM	20800		36600	1	1820		27.00	>	04.0		10.3	<b>-</b>
	MINOMIN	. 33		, ,		1020		3007		8430		22600	
	CHROMIUM	28.1		9.99		47.1		20.7		8.89		3.81	
	COBALT	3.18		3.49		2.5	n	2.5	ח	3.26		2 5	1
	COPPER	10.1		16.2		5.11		4.27		13.7		2,7	)
	IRON	11400		12700		0096		0029		12000		1610	Ξ
	LEAD	9.84		7.44	n	9.65		7 44	1	7 44 11		7.44	) <u>:</u>
	MAGNESIUM	3930		2830		1930		2460	)	2310		3360	5
	MANGANESE	30.2	n	30.2	=	30.2	Ξ	30.2	11	051		0007	-
	MERCHRY	0.0551	1	900	) <b>=</b>	300	> =	4.00	o ;	130		51.5	<b>-</b>
		1000		0.0	<b>-</b>	CO:O	>	0.02	>	0.61 U		0.61	<b>-</b>
	MICKEL	9.73		30		6.72		4.88		7.84 U		7.84	n
	POTASSIUM	202	n	202	<b>-</b>	207	ם	207	ח	1460		239	
	SODIUM	177		128		259		219		159		121	)
	VANADIUM	. 50		16.5		14.8		11.9		72		2 03	11
	ZINC	43.4		19.8		26.8		22.9		10.3		, ,	) <u>-</u>
PESTICIDES/PCBS	PCB 1248 ·	•	n	0.1	T.	0.1	III	0		} \ ?		0.7 V	<b>o</b>
SEMIVOLATILES	BENZYL ALCOHOL	0.032	n	0.032	Ω	0.032	ם :	0.032	; =	0 032		620	
	PCB 1248		n		5	0.32	E	0 32	· =	11 65 0	_	7000	) <u>=</u>
									3	20:0		7.75	3

Summary of Analytes Detected in Soil for the Bomb and Shell Reconditioning Building (SWMU 23)

Building 1345Outfall - Subsurface Soil (continued)

Group	SolutorA	BRP-94-07B	.07B	BRP-94-07C	07C	BRP-94-08B	08B	BRP-94-08C	-08C	BRP-94-09B	_	BRP-94-09B	)9B
	Carrent Les	110		11 C		3116		211		3 ft (dup)		3 17	
METALS	ALUMINUM	1220	Ω	1220	n	857	=	857	=	857		1220	=
	ARSENIC	7 00		900			)		)	3		777	>
		4.70		7.78		3.71		2.88		6.67		7.03	
	BARIUM	10.7	<b>-</b>	10.7	n	8.43	n	8.43	n	8.43 U		10.7	=
	CALCIUM	21800		20100		17900		20000		19100		20800	)
	CHROMIUM	1.69	ח	1.69	ב	8.61		8.5		12.7		13.9	
	COBALT	2.5	n	2.5	ח	2.5	n	2.5	ח	2.5 U		2.5	=
	COPPER	6.02		3.96		4.45		5.2		6.5		8 53	)
	IRON	8780		1730	ם	1120	n	6250		6380		1730	
	LEAD	8.9		7.44	Þ	9.78		7.44	D	21.8		2 ~	•
	MAGNESIUM	2150		1380		1180		2420		2120		2290	
	MANGANESE	28.5	ם	28.5	n	30.2	ח	30.2	Ω	30.2 U		28.5	=
	MERCURY	0.61	⊃	0.61	ם	0.61	ח	0.61	n	0.61 U		0.61	=
	NICKEL	3.87		3.99		3.82		5.91		5.35		3 87	)
	POTASSIUM	235	n	235	ח	207	<b>-</b>	207	n	207 U		235	=
	SODIUM	109		173		117		396		157		318	)
	VANADIUM	3.74	5	3.74	n	2.23	ח	11.2		2.23 U		3.74	Ξ
	ZINC	69.9	n	69.9	ח	25.3		3.55	ם	46.4		41.3	;
PESTICIDES/PCBS	PCB 1248	NA		Ν		0.1	Ð	0.1	ſ	0.184		0.117	
SEMIVOLATILES	BENZYL ALCOHOL	0.032	כ	0.032	ח	0.065	_	0.032	ח	0.032 U		0.032	$\supset$
	PCB 1248	0.32	3	0.32	5	0.32	Ð	0.32	Ε	111 65 0	_	0 33	Ξ

Summary of Analytes Detected in Soil for the Bomb and Shell Reconditioning Building (SWMU 23)

Building 1345Outfall - Subsurface Soil (continued)

		BRF-34-09C		BRP-94-09C	)9C
Group	Analytes	S ft (dup)		5 ft	
METALS	ALUMINUM	857	n	857	D
	ARSENIC	4.6		4.84	
	BARIUM	8.43	Ω	8.43	n
	CALCIUM	24200		16600	
	CHROMIUM	10.7		12.1	
	COBALT	2.5	n	2.5	Π
	COPPER	5.31		5.61	
	IRON	0999		7200	
	LEAD	13		10.3	
	MAGNESIUM	1420		1440	
	MANGANESE	30.2	Ω	30.2	Ω
	MERCURY	0.61	n	0.61	n
	NICKEL	5.52		6.23	
	POTASSIUM	207	n	207	n
	SODIUM	157		172	
	VANADIUM	2.23	n	11.2	
	ZINC	20		22.1	
PESTICIDES/PCBS	PCB 1248	0.1	3	0.1	U
SEMIVOLATILES	BENZYL ALCOHOL	0.083	J	0.065	
	PCB 1248	0.32	3	0.32	TO TO

Summary of Analytes Detected in Soil for the Bomb and Reconditioning Building (SWMU 23)

Asphalt Area - Surface Soil

Group	Analytes	BRB-94-02A 0 5 ft	_	BRB-94-04A 0 <b>5</b> ft	<b>4</b> A	BRB-94-05A	05A	BRP-94-13A	-13A	BRS-92-06	BRS	BRS-94-03
	con l'antier	0.5 11		11.5.11		11 C.U		0.5 11		1 0 E	0	0.5 ft
ANIONS	NITRATE	NA		N A		X		Z		38	Ì	_
METALS	ALUMINUM	7900		7470		6530		7350		Q Z	722	. <
`	ARSENIC	3.96		4.07		5.94		3.29		72 11	4.0	> oc
	BARIUM	79.7		70.4		70.4		68.4		13.5	40	. 4
	CALCIUM	46300		29200		23200		30800		AZ	204	. 5
	CHROMIUM	70.5		28		162		8.9		~		2
	COBALT	3.49		2.5	n	3.58		3.75		Y Z	; ;	7
	COPPER	8.12		14.3		10.7		7.2		11	: =	
	IRON	11100		. 9010		19000		9380		23000	694	· c
	LEAD	10.3		7.44	ח	7.44	n	10.6		43	27	, ve
	MAGNESIUM	5930		4900		4540		4470		Y Z	332	
	MANGANESE	227		171		186		175		AN	142	
	MERCURY		D	0.61	n	0.61	n	0.61	n	0.174	0.0	2
	NICKEL	7.47		7.84	n	7.84	Þ	5.57		7.4 U	(**	)
	POTASSIUM	2070		1960		1770		1700		N N	199	=
	SILVER	0.803	ם	0.803	n	0.803	'n	0.803	ח	0.0615	0.803	3 C
	SODIUM	336		256		175		243		NA	213	
	VANADIUM	3.74	Ξ,	2.93	n	2.93	n	3.74	5	NA	8.1	
	ZINC	69.9	ח	23.7		22.7		69.9	n	9/	26.	_
SEMIVOLATILES	2-METHYLNAPHTHALENE	0.032	ח	0.02		0.032	n	0.032	ח	0.66 U	0.03	2 U
	ACENEPHTHENE	0.041	<b>-</b>	0.041	n	0.11		0.041	n	0.82 U	0.3	٠,
	BENZO [G, H, I] PERYLENE	0.18	<b>-</b>	0.18	n	0.18	n	0.18	n	0.839	0.0	_
	BENZYL ALCOHOL	0.032	_	0.01		0.032	n	0.032	Ω	0.66 UJ	9.0	2
	FLUOKANTHENE	0.061		0.08		0.45		0.032	ם	1.68	1.7	
	FLUOKENE	0.065		0.065	n	0.065	Þ	0.065	n	0.66 UJ	0.2	
	PHENANTHRENE	0.11		0.21		0.57		0.032	Ω	1.05	1.8	
	PYRENE	0.22		9.0		0.92		0.083	n	2.1	9	
CARCINOGENIC PAHS	BENZO [A] ANTHRACENE	0.041	_	0.21		0.42		0.041	Ω	1.47	1.4	
	BENZO [A] PYRENE	1.2	_	1.2	<b>_</b>	1.2	n	1.2	ח	1.26	1.2	n
	BENZO [B] FLUORANTHENE	0.31	_	0.31	Ω	0.31	ם	0.31	Ω	1.05	1.9	
	BENZO [K] FLUORANTHENE	0.13	_	0.13	<b>_</b>	0.13	ם	0.13	n	1.26	0.8	
	CHRYSENE	0.15		0.46		0.67		0.032	ח	1.47	2.1	
	INDENO [1,2,3-C,D] PYKENE	2.4	_	2.4	<b>D</b>	2.4	ם	2.4	n	0.839	2.4	n
	DIAIT-ECOIVALEIVIS	\				2		9				

Summary of Analytes Detected in Soil for the Bomb and Reconditioning Building (SWMU 23)

Asphalt Area - Subsurface Soil

		BRB-94-02B	_	BRB-94-02C	)2C	BRB-94-04B	04B	BRB-94-04C	AC C	BRB-94-05B	05B	BRB-94-05C	-05C
Group	Analytes	3 ft		5 12		3 ft		S ft		3 ft		5 ft	
METALS	ALUMINUM	1220 L	_	1220	n	7290		1170	ר	1170	ם	1170	=
	ARSENIC	2.5 L	_	4.96		3.27		3.31		7.22	,	2.58	)
	BARIUM	10.7 L	_	10.7	n	68.7		10.5	n	10.5	n	10.5	ם
	CALCIUM	32900		54000		95000		28600		25900		45100	
	CHROMIUM	78.2		27.6		27.4		14.5		116		16.6	
	COBALT	3.38		2.5	n	2.5	n	2.5	ם	5.41		4.69	
	COPPER	8.72		4.03		14		6.24		7.15		4.19	
	IRON	1730 U	_	1730	n	8800		1610	ם	11300		1610	n
	LEAD	7.44 U	_	14		7.44	Þ	7.44	ם	7.44	Ω	7.44	<b>-</b>
	MAGNESIUM	3700		3570		4790		3230		4080		2540	
	MANGANESE	28.5 U	_	28.5	n	167		31.5	ב	31.5	n	31.5	n
	NICKEL	7.34		4.78		7.84	ם	7.84	ם	7.84	Ω	7.84	n
	POTASSIUM	235 U	_	235	ב	1910		239	<b>-</b>	239	n	239	ח
	SILVER	1.39		0.803	ם	0.803	ם	0.803	ם	0.803	ח	0.803	n
	SODIUM	222		108		250		227		134		901	
	VANADIUM	22.9 J		3.74	5	2.93	Ω	2.93	n	16.9		47.2	
	ZINC	n 69.9	_	69.9	ב	23.1		2.8	n	15		2.8	n
SEMIVOLATILES	2-METHYLNAPHTHALENE	0.22		0.032	ר	0.082		0.25		0.032	n	0.032	n
	BENZO [G,H,I] PERYLENE	0.49		0.18	Þ	0.18	n	0.94		0.18	n	0.18	ח
	BENZYL ALCOHOL	90.0		0.067		0.032	n	0.032	n	0.032	n	0.032	n
	FLUORANTHENE	0.14		0.032	Þ	0.064		0.2		0.051		0.032	ם
	PHENANTHRENE	0.69		0.032	ב	0.38		1.2		0.14		0.032	ח
	PYRENE	2.4		0.083	ח	1.3		4.3		0.42		0.083	Þ
CARCINOGENIC PAHS	BENZO [A] ANTHRACENE	0.85		0.041	n	0.35		1.5		0.14		0.041	n
	BENZO (B) FLUORANTHENE	0.31 U	_	0.31	Þ	0.31	n	0.65		0.31	ח	0.31	ח
	CHRYSENE	1.6		0.032	Þ	0.88		2.5		0.27		0.032	ח
	B(A)P-EQUIVALENTS	0.087		0.128	n	0.036		0.218		0.014		0.128	ח

Summary of Analytes Detected in Soil for the Bomb and Reconditioning Building (SWMU 23)

Asphalt Area - Subsurface Soil (continued)

	-																				-							
BRP-94-13C	sπ	1220 U	2.5 U	10.7 U	42300	1.69 U	2.66	2.84 U	1730 U	8.12	3030	28.5 U	2.74 U	235 U	0.803 U	252	3.74 UJ	n 69:9	0.032 U	0.18 U	0.032 U	0.032 U	0.03Z U	0.083 U	0.041 U	0.31 U	0.032 U	0.128 U
BRP-94-13B	3 ft	1220 U	5.25	10.7 U	35000	1.69 U	2.5 U	3.94	1730 U	7.44 U	2640	28.5 U	3.73	235 U	0.803 U	163	3.74 UJ	O 69.9	0.032 U	0.18 U	0.032 U	0.032 U	0.032 U	0.083 U	0.041 U	0.31 U	0.032 U	0.128 U
	Analytes	ALUMINUM	ARSENIC	BARIUM	CALCIUM	CHROMIUM	COBALT	COPPER	IRON	LEAD	MAGNESIUM	MANGANESE	NICKEL	POTASSIUM	SILVER	SODIUM	VANADIUM	ZINC	2-METHYLNAPHTHALENE	BENZO [G,H,I] PERYLENE	BENZYL ALCOHOL	FLUORANTHENE	PHENANTHRENE	PYRENE	BENZO [A] ANTHRACENE	FLUORA	CHRYSENE	B(A)P-EQUIVALENTS
	Group	METALS																	SEMIVOLATILES						CARCINOGENIC PAHS			

Summary of Analytes Detected in Soil for the Bomb and Reconditioning Building (SWMU 23)

Perimeter Area - Surface Soil

		BRP-94-01A	BRP-94-03A	BRS-92-02	BRS-92-03	BRS-92-04	BRS-92-05
Group	Analytes	0.5 ft	0.5 ก	<b>u</b> 0	0 ft	0 ft	0 ft
ANIONS	NITRATE	NA	NA	3.36 U	3.36 U	6.59	5.95
METALS	ALUMINUM	13200	13600	Y.	NA.	Y.	Y Z
	ARSENIC	4.58	5.25	24 U	48 U	24 U	24 11
	BARIUM	118	101	74	31	110	200
	BERYLLIUM	0.573	0.57	0.078 U	0.16 U	0.078 U	0.078 U
	CADMIUM	1.2 U	1.2 U	0.515	0.85 U	0.424 U	0.424 U
	CALCIUM	22400	3300	NA	NA	NA	Ϋ́Z
	CHROMIUM	23.3	18.9	<b>&amp;</b>	22	20	23.6
	COBALT	5.15	5.26	NA	AN	AN	Z
	COPPER	20.6	11.6	27	7.2 ·	29	52
	IRON	15300	14600	12000	6200	21000	16000
	LEAD	34	14.8	140	40	240	110
	MAGNESIUM	7260	3990	NA	NA	¥Z	Y Z
	MANGANESE	375	313	NA	AN	Ϋ́	N N
	MERCURY	0.61 U	0.61 U	0.0259 U	0.0259 U	0.0259 U	0.0259 U
	NICKEL	8.64	7.94	2.46 U	4.9 U	26.3	25.8
	POTASSIUM	3660	3410	Ϋ́Α	NA	Ϋ́	NA
	SILVER	0.803 U	0.803 U	0.234	0.0476	0.0992	0.0765
	SODIUM	300	226	NA A	NA	NA	NA AN
	VANADIUM	21 J	22.3 J	NA	ΝA	AN	Ϋ́
	ZINC	61.9	43.5	300	40	140	120
SEMIVOLATILES	BENZYL ALCOHOL	0.032 U	0.053	6.6 UJ	0.33 UJ		6.6 UJ
	FLUORANTHENE	0.032 U	0.032 U	10.4 U	0.52 U	10.4 U	10.4 U
•	PHENANTHRENE	0.032 U	0.032 U	8.2 U	0.41		8.2

Summary of Analytes Detected in Soil for the Bomb and Reconditioning Building (SWMU 23)

Perimeter Area - Surface Soil (continued)

Group	Analytes	BRS-94-02 0.5 ft	BRS-94-03 0.5 ft	BRS-94-04 0.5 ft	BRS-94-05 0.5 ft	BRS-94-07	BRS-94-08
							11 600
ANIONS	NITRATE	NA	Ϋ́	Ą	Ą	V.	ATA
METAIS	AT TIMENTIAN	0001		477.	4	V.	₹ 2.
	ALUMINOM	00611	0630	11300	2460	8230	13100
	ARSENIC	5.56	4.35	4.52	5.3	80.9	717
	BARIUM	120	80.1	113	63.6	84.8	143
	BERYLLIUM	0.427 U	0.427 U	0.427 U	0.427 U	0.427	0.427
	CADMIUM	1.2 U ·	1.2 U	1.2 U	1.2 U	12 11	12 11
	CALCIUM	4470	34800	3640	33000	25200	14400
	CHROMIUM	12	10.2	12.4	7.3	19.2	15.1
	COBALT	5.6	3.61	5.28	3.4	4 46	5 63
	COPPER	11.9	9.95	9.01	96.6	9 ==	14.4
	IRON	13800	9700	13200	7940	11800	15600
•	LEAD	14.5	15	13.3	14	30.1	13.1
	MAGNESIUM	5480	2080	5080	4550	4310	0908
	MANGANESE	372	239	351	181	020	9000
	MERCURY	11 500	11 50 0	160	101	50.0	405
	NICKEI	0 300	0 0	0.00	0.03	0.05	0.05 U
	NICAEL	7.05	4.76	92.9	3.14	5.65	8.81
	POTASSIUM	3210	1670	3060	1290	1840	4210
	SILVER	0.803 U	0.803 U	0.803 U	0.803 U	0.803 U	0.803
	SODIUM	226	244	229	311	104	284
	VANADIUM	15.5	12.3	14.8	8.71	163	10 0
	ZINC	41.7	30.3	42.8	29.1	48.7	
SEMIVOLATILES	BENZYL ALCOHOL		0.032 U	0.032 U	0.032 U	0.037	0.032
	FLUORANTHENE	0.032 U	0.032 U	0.045	0.032 U	0.032 U	0.032
	PHENANTHRENE		0.032 U	0.032 U	0.032	0.032	0 030 11

Summary of Analytes Detected in Soil for the Bomb and Reconditioning Building (SWMU 23)

Perimeter Area - Surface Soil (continued)

		BRS-94-09	BRS-94-10	4-10
Group	Analytes	0.5 กิ	0.5 ft	Tt.
ANIONS	NITRATE	Ž	Ž	
METALS	ALUMINUM	5190	7850	
	ARSENIC	5.9	2.92	
	BARIUM	74.3	96.2	
	BERYLLIUM	0.427 U	0.427	
	CADMIUM	1.2 U	1.2	
	CALCIUM	19800	18700	
	CHROMIUM	8.57	10.6	
	COBALT	2.98	3.93	
	COPPER	24.9	20.4	
	IRON	9030	11100	
	LEAD	12.6	13.2	
	MAGNESIUM	4060	4880	
	MANGANESE	141	229	
	MERCURY	0.0529	0.05	Ω
	NICKEL	3.55	4.85	
	POTASSIUM	1380	2160	
	SILVER	0.803 U	0.803	Ω
	SODIUM	303	350	
	VANADIUM	9.04	13.3	
	ZINC	76.4	99	
SEMIVOLATILES	BENZYL ALCOHOL	0.032 U	0.032	Ω
	FLUORANTHENE	0.032 U	0.032	U
	PHENANTHRENE	0.18	0.15	

Summary of Analytes Detected in Soil for the Bomb and Reconditioning Building (SWMU 23)

Perimeter Area - Subsurface Soil

		BRP-94-01B	118	<b>BRP-94-01C</b>	BRP-94-03B	-03B	BRP-94-03C	03C
Group	Analytes	3 ft		5 ft	3 ft		SA	
METALS	ALUMINUM	1220	ם	8110	1220	ם	1220	Ω
	ARSENIC	4.7		7.29	7.22		4.57	
	BARIUM	10.7	n	80.4	55.5		10.7	Ω
	CALCIUM	13900		36100	23700		24600	
	CHROMIUM	60.6		12.2	18.3		18.1	
	COBALT	3.19		3.59	3.29		3.18	
	COPPER	6.83		9.11	5.54		5.34	
	IRON	8930		12700	10200		1730	n
	LEAD	7.44	ם	12.6	7.44	ח	7.44	ח
	MAGNESIUM	1490		4030	2070		2160	
	MANGANESE	28.5	n	275	179		28.5	n
	NICKEL	5.53		9.92	97.9		4.46	
-	POTASSIUM	235	n	1410	235	ח	235	n
	SODIUM	127		212	159		139	
	VANADIUM	3.74	5	19.1 J	3.74	5	3.74	S
SEMIVOLATILES	BENZYL ALCOHOL	0.066		0.046	0.032	Ω	0.032	=

NA = Not analyzed
U = Not detected; value is the Certified Reporting Limit
Dup = Duplicate analysis
B(a)P = Benzo(a)pyrene
J = Value is estimated.

Summary of Analytes Detected in Soil for the Former Transformer Boxing Area (SWMU 31)

Surface Soil

		TBS-94-01	TBS-94-02	TBS-94-03	TBS-94-04	TRS-94-05	TBC-04-06
Group	Analytes	0.5 ft	0.5 ft	0.5 ก	0.5 ft	0.5 ft	0 5 6
							0.3 11
METALS	ALUMINUM	Ϋ́	Ą	6 640	***	;	į
	ARSENIC			0.010	YN	A'A	2,670
		ZY.	Y V	10.2	Ϋ́	NA	7.57
	BAKIUM	Y X	NA	65.4	NA	Ϋ́	¥0.5
	CALCIUM	Y'A	NA	49.400	Y.	. V	75.000
	CHROMIUM	Ν	NA V	14.1	V.		30.50
	COBALT	NA	Y X	2.74	V V	<b>Y</b> :	11.7
	COPPER	VIV.		1.1	VA	YZ.	2.5
	MORI	YN :	۲ ۲	11.9	YN V	NA	9.25
	NOM.	Y'A	NA V	1,390 U	Ϋ́	NA	1.390
	LEAD	Y Y	NA	40.4	NA	Y.	31.3
	MAGNESIUM	NA	NA	5,260	٧×	¥ Z	5.440
	MANGANESE	Y Y	NA	149	Y	V	2,440
	NICKEL	ΝΑ	NA	5.13	Y X	V N	101
	POTASSIUM	٧٧	N A	1.750	. AN	N.A.	+1.+
	SODIUM	Y	· V	200	<b>V</b> .	Y.	1,490
	VANADIM		Y ;	467	Y V	NA VA	284
	ZING	< :	Ϋ́	2.91 U	NA	NA	2.91
24 144 10/M/133	ZINC	٧٧	NA	52.6	NA	Ϋ́N	41.2
SEMINOLATILES	BIS (2-ETHYHEXYL) PHTHALATE	Ϋ́Υ	NA	0.48 U	NA	VZ.	0 03
	FLUORANTHENE	NA V	NA	0.36	Ϋ́Υ	V V	0.23
	PHENANTHRENE	٧×	NA	0.34	NA	NA.	0.23
		NA	NA	0.56	NA V	Y X	0.33
c-PAHs	_	NA	NA	0.27	\ X	· V	0.52
	BENZO [B] FLUORANTHENE	ΝA	ΝΑ	0.62	Y	, AN	0.10
	CHRYSENE	NA	NA	0.39	Y X	Y X	0.54
	B(a)P-equivalent c-PAH concentration	VV	NA	0.0894	Y Z	V N	17:0

Summary of Analytes Detected in Soil for the Former Transformer Boxing Area (SWMU 31)

Surface Soil (continued)

		TBS-94-07	TBS-94-08	TBS-94-09	TBS-94-09	TBS-94-10	TBS-94-11
Group	Analytes	0.5 ณ	0.5 ft	0.5 ft	0.5 ft (dup)	0.5 ft	0.5 ft
0.14.1.27							
MEIALS	ALUMINUM	Y Y	NA	8,250	8,290	NA	Y.
	ARSENIC	Ϋ́	NA	8.99	9.74	NA.	· Z
	BARIUM	Y.	NA AN	83.6	87.7	NA	
	CALCIUM	ĄZ	VZ	46 300	3:50	7 :	YN :
	CHROMITIM			WC,0+	49,900	Z V	Y V
	CINCINION	Y :	Y.	15.7	15.1	NA	٧X
	COBALI	٧	ΥN	3.29	2.99	Ν	ΥN
	COPPER	٧X	NA.	14.4	14.5	NA	Ϋ́
	IKON	NA NA	VA.	8,600	7,970	NA A	Ϋ́
	LEAD	۷V	NA	37.2	36.4	NA	Y Z
	MAGNESIUM	NA	NA	5,910	5,400	N N	Y X
	MANGANESE	ΝΑ	NA NA	195	193	· V	Y Z
	NICKEL	NA	ΝA	7.02	6.23	Y.	Y X
	POTASSIUM	Ϋ́	NA	2,180	2,270	Y.	Ϋ́
	SODIUM	VN	NA	369	317	Y.	Y Z
	VANADIUM	ΥV	NA	2.91 U	2.91 U	¥Z	Y X
	ZINC	VA	NA	62.5	62.8	VZ.	Y Y
SEMIVOLATILES	BIS (2-ETHYHEXYL) PHTHALATE	NA	NA	1.8	0.82	XX	Z
	FLUORANTHENE	VV	NA	0.14	0.2	NA	V.
	PHENANTHRENE	NA	NA	0.18	0.23	NA	Y X
	PYRENE	NA	NA	0.34	0.28	VN.	Y Z
c-PAHs	BENZO [A] ANTHRACENE	ΝΑ	NA	0.14	0.15	N Y	Z Z
	BENZO [B] FLUORANTHENE	NA	NA	0.31 U	0.31 U	ΥN	Y V
	CHRYSENE	ΝΑ	NA	0.2	0.2	NA	Ϋ́
	B(a)P-equivalent c-PAH concentration	Ϋ́	NA	0.0142	0.0152		

Summary of Analytes Detected in Soil for the Former Transformer Boxing Area (SWMU 31)

		TBS-94-12	12	TBS-94-13	TBS-94-14	TBS-94-15	2	TBS-94-16	TBS-94-17
Group	Analytes	0.5 ft		0.5 ณ	0.5 ft	0.5 ft		0.5 ft	0.5 ft
METALS	ALUMINUM	11,600		NA	ΥN	7,170		NA	Ϋ́
	ARSENIC	10.4		NA	NA	8.96		٧X	N.
	BARIUM	<u>8</u>		NA	NA	71.8		Ϋ́	Y.
	CALCIUM	45,300		NA A	NA	47,500		AN	Y X
	CHROMIUM	17.7		ΥN	NA	14.2		¥Z	N X
	COBALT	3.58		YZ YZ	NA	2.5	Ω	Y'N	Y.
	COPPER	15.3		YN.	NA	11.1		VA	YZ
	IRON	10,500		NA	NA	7,530		٧Z	Ϋ́Z
	LEAD	32.3		Y.	ΝA	30.3		Ϋ́Υ	Z Z
	MAGNESIUM	6,100		NA AN	NA	5,740		Y.	Z Z
	MANGANESE	238		NA	NA	161		VN	Y X
	NICKEL	6.55		NA	NA	5.07		Y.	Ϋ́ X
	POTASSIUM	3,250		NA	Ϋ́N	1,980		V.	VN
	SODIUM	354		Y.	NA	308		Ϋ́	NA
	VANADIUM	18.1		NA	NA	2.91	Ω	Ϋ́	Y X
	ZINC	57.6		NA	NA	51.4		ν. V.	Y.
SEMIVOLATILES	BIS (2-ETHYHEXYL) PHTHALATE	0.48	Ω	NA	YN,	0.48	Ω	ΥN	Y.
	FLUORANTHENE	0.043		NA	NA	0.14		ΥN	Ϋ́
	PHENANTHRENE	0.032	n	۷۷	VA	0.14		NA	Y.
	PYRENE	0.083	n	٧×	NA	0.19		Ϋ́	Ą
c-PAHs	BENZO [A] ANTHRACENE	0.041	Ω	NA	AN	0.11		Y'Y	Y.
	BENZO [B] FLUORANTHENE	0.31	Ω	NA NA	NA	0.31	Ω	Ϋ́N	Y.
	CHRYSENE	0.029		NA	NA	0.14		VZ.	Y X
	B(a)P-equivalent c-PAH concentration	0.0001		AN	NA	0.0111		Y Z	<b>*</b> 2

Summary of Analytes Detected in Soil for the Former Transformer Boxing Area (SWMU 31)

Surface Soil (continued)

		TBS-94-18	TBS-94-19	TBS-94-20	TBS-94-21
Group	Analytes	0.5 ft	0.5 ft	0.5 ft	0.5 ft
METALS	ALUMINUM	8,360	ΝΑ	٧X	7,120
	ARSENIC	8.41	NA	NA	20.6
	BARIUM	83.5	NA	NA NA	74.1
	CALCIUM	67,000	NA	¥Z	78.000
	CHROMIUM	14	NA	Ϋ́N	16.1
	COBALT	2.81	VA	NA	2.5 11
	COPPER	13	NA	NA NA	
	IRON	8,140	, AN	NA N	8.310
	LEAD	26.3	ΝΑ	Ϋ́	25.4
	MAGNESIUM	5,240	NA	\ X	5 720
	MANGANESE	193	NA	V V	77
•	NICKEL	6.37	NA	Y.	99.9
	POTASSIUM	2,200	N A	Y.	1 850
	SODIUM	327	NA	. Y	250
	VANADIUM	2.91 U	NA	Y.	2.91 U
	ZINC	72.7	NA	NA	45.7
SEMIVOLATILES	BIS (2-ETHYHEXYL) PHTHALATE	0.48 U	NA	AN	0.48
	FLUORANTHENE.	0.032 U	NA	NA	290.0
	PHENANTHRENE	0.032 U	VN VN	Ϋ́Z	0.075
	PYRENE	0.083 U	NA	NA	0.083 11
c-PAHs	BENZO [A] ANTHRACENE	0.04I U	٧٧	NA	0.041 U
	BENZO [B] FLUORANTHENE	0.31 U	NA.	AN	0.31 U
	CHRYSENE	0.032 U	NA	NA	0.00
	B(a)P-equivalent c-PAH concentration	0.0059 U	NA	NA	0.0001
All values are in ng/a (equal to nam)	dual to nem)				

All values are in µg/g (equal to ppm)

NA = Not analyzed

 $\mathbf{U} = \mathbf{Not}$  detected; value is the Certified Reporting Limit

Dup = Duplicate analysis

c-PAH = carcinogenic polycyclic aromatic hydrocarbons

B(a)P = benzo(a)pyrene

Summary of Analytes Detected in Soil for the PCB Spill Area (SWMU 32)

Surface Soil

NA NA NA NA NA NA NA NA NA NA NA NA NA N	Group	Analytes	PPB-94-01A 0.5 ft	PPB-94-02A 0.5 ft	PPB-94-03A 0.5 ft	PPB-94-04A	PPB-94-05A	PPB-94-06A
ALUMINUM         16,800         NA         12,900         NA         NA           ARSENIC         10.9         NA         7.4         NA         NA           BARUM         175         NA         125         NA         NA           BARUM         1.2         NA         1.2         NA         NA           CADMIUM         1.2         U         NA         NA         NA           CALCIUM         41300         NA         1.2         U         NA         NA           CALCIUM         41300         NA         1.2         U         NA         NA           CALCIUM         34.8         NA         26.7         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COPPER         20.2         NA         4.57         NA         NA           COPPER         15800         NA         14.6         NA         NA           MAGNESIUM         10100         NA         18.9         NA         NA           MANGKEL         11.8         NA         8.						11 000	11 6.0	0.5 11
ARSENIC         10.9         NA         12,900         NA         NA           BARUUM         175         NA         125         NA         NA           BARUM         175         NA         125         NA         NA           CADMIUM         1.2         U         NA         NA         NA           CADMIUM         1.2         U         NA         NA         NA           CADMIUM         1.2         U         NA         NA         NA           CALCIUM         41300         NA         1.2         U         NA         NA           COBALT         5.95         NA         4.57         NA         NA         NA           COBALT         5.95         NA         4.57         NA         NA         NA           COPPER         COPPER         NA         18.9         NA         NA           M	METALS	ALUMINUM	16 800	114				
BARUIM         10.9         NA         7.4         NA         NA           BARUIM         175         NA         125         NA         NA           BARUILIUM         0.744         NA         0.53         NA         NA           CALCIUM         1.2         U         NA         1.2         U         NA           CALCIUM         41300         NA         1.2         U         NA         NA           CALCIUM         41300         NA         1.2         U         NA         NA           CALCIUM         41300         NA         26.7         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COPER         20.2         NA         4.57         NA         NA           COPER         20.2         NA         4.57         NA         NA           IRON         15800         NA         18.9         NA         NA           MAGNESIUM         10100         NA         93.0         NA         NA           MAGNESIUM         11.8         NA         2.90         NA         NA           NICEL         11.8         NA<		ARGENIO	000,01	AN.	12,900	VΑ	٧X	Y'A
BARKUM         175         NA         125         773         NA           CADMIUM         0.744         NA         0.53         NA         NA           CALCIUM         1.2         U         NA         NA         NA           CALCIUM         41300         NA         1.2         U         NA         NA           CHROMIUM         41300         NA         82000         NA         NA           COPPER         20.2         NA         4.57         NA         NA           COPPER         20.2         NA         14.6         NA         NA           COPPER         20.2         NA         14.6         NA         NA           COPPER         20.2         NA         14.6         NA         NA           COPPER         20.2         NA         1890         NA         NA           MAGNESIUM         10100         NA         18.9         NA         NA           MAGNESIUM         10100         NA         250         NA         NA           MAGNESIUM         10100         NA         8.52         NA         NA           NICKEL         11.8         NA         250		CINCELLIC	10.9	NA	7.4	V	474	
BERYLLIUM         0.744         NA         0.53         NA         NA           CADMIUM         1.2         U         NA         1.2         U         NA           CALCIUM         41300         NA         1.2         U         NA         NA           CALCIUM         41300         NA         8200         NA         NA           CHROMIUM         34.8         NA         26.7         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COPER         NA         4.57         NA         NA         NA           COPER         NA         4.57         NA         NA         NA           RAGNESIUM         10100         NA         18.9         NA         NA           MARCURY         0.055         J         NA         NA         NA           MICKEL         11.8         NA         NA         NA           VOTASSIUM         379         NA         NA <t< td=""><td></td><td>BARIUM</td><td>175</td><td>V.V.</td><td></td><td>1111</td><td>W</td><td>Y Y</td></t<>		BARIUM	175	V.V.		1111	W	Y Y
CADMIUM         1.2         U         NA         0.53         NA         NA           CALCHUM         41300         NA         1.2         U         NA         NA           CALCHUM         41300         NA         1.2         U         NA         NA           CHROMIUM         34.8         NA         26.7         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COPPER         2.02         NA         14.6         NA         NA           RON         15800         NA         18.9         NA         NA           MAGNESIUM         10100         NA         18.9         NA         NA           MARCURY         0.055         J         NA         NA         NA           NICKEL         11.8         NA         18.5         NA         NA           NOTASSIUM         30.0         N		BERYLLINA	777	17.	<b>C71</b>	٧×	××	VV
CALDMIUM         1.2         U         NA         1.2         U         NA         NA           CALCIUM         41300         NA         82000         NA         NA         NA           CHROMIUM         34.8         NA         26.7         NA         NA           COBALT         5.95         NA         4.57         NA         NA           ROD         15800         NA         14.6         NA         NA           ROD         NA         18.9         NA         NA           MAGNESIUM         10100         NA         18.9         NA         NA           MECURY         0.055         J         NA         NA         NA           NACEL         11.8         NA         1.00         NA         NA           NANDUM         21.5         NA         NA			0.744	Y.	0.53	AN	NA	V.V.
CALCIUM         41300         NA         82000         NA         NA           CHROMIUM         34.8         NA         26.7         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COPER         20.2         NA         4.57         NA         NA           COPER         20.2         NA         4.57         NA         NA           RON         15800         NA         10800         NA         NA           MAGNESIUM         10100         NA         18.9         NA         NA           MAGNESIUM         10100         NA         18.9         NA         NA           MAGNESIUM         10100         NA         18.9         NA         NA           MECURY         11.8         NA         8.52         NA         NA           NANADIUM         21.5         NA         43.8         NA         NA           SODIUM         VANADIUM         21.5         NA         43.8		CADMIUM		XX	17 11			Y.
CHROMIUM         34.8         NA         82000         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COBALT         5.95         NA         4.57         NA         NA           COPPER         20.2         NA         14.6         NA         NA           IRON         15800         NA         18.9         NA         NA           IRON         27.7         NA         18.9         NA         NA           MAGNESIUM         10100         NA         18.9         NA         NA           MAGNESIUM         10100         NA         18.9         NA         NA           MARCURY         0.055         J         NA         NA         NA           MERCURY         0.055         J         NA         NA         NA           NICKEL         11.8         NA         8.52         NA         NA           NOTASSIUM         5030         NA         3790         NA         NA           VANADIUM         21.5         NA         43.8         NA         NA           BENZYL ALCOHOL         0.032         U         NA         0.032 </td <td></td> <td>CALCIUM</td> <td></td> <td>V.V.</td> <td>0 7:10</td> <td>NA NA</td> <td>NA</td> <td>¥</td>		CALCIUM		V.V.	0 7:10	NA NA	NA	¥
CORPOLITY         5.95         NA         26.7         NA         NA           COPPER         5.95         NA         4.57         NA         NA           COPPER         20.2         NA         14.6         NA         NA           IRON         15800         NA         10800         NA         NA           LEAD         27.7         NA         18.9         NA         NA           MAGNESUM         10100         NA         18.9         NA         NA           MAGNESUM         10100         NA         18.9         NA         NA           MANGANESE         463         NA         NA         NA         NA           MANGANESE         463         NA         NA         NA         NA           MICKEL         11.8         NA         8.52         NA         NA           NICKEL         11.8         NA         8.52         NA         NA           SODIUM         347         NA         27.4         NA         NA           VANADIUM         21.5         NA         43.8         NA         NA           BENZYL ALCOHOL         0.032         U         NA         0.072		CHROMITIM	0001	IVA.	82000	NA	ΝA	AN
COPPER         5.95         NA         4.57         NA         NA           IRON         12.2         NA         14.6         NA         NA           IRON         15800         NA         14.6         NA         NA           LEAD         27.7         NA         18.9         NA         NA           MAGNESIUM         10100         NA         18.9         NA         NA           MANGANESE         463         NA         18.9         NA         NA           MANGANESE         463         NA         18.9         NA         NA           MANGANESE         463         NA         NA         NA         NA           MERCURY         0.055         J         NA         NA         NA           MERCURY         0.055         J         NA         NA         NA           NICKEL         11.8         NA         8.52         NA         NA           POTASSIUM         5030         NA         3790         NA         NA           SODIUM         347         NA         43.8         NA         NA           BENZYL ALCOHOL         0.032         U         NA         0.072		CODATA	34.8	NA .	26.7	NA	Ÿ	· V
COPPER         20.2         NA         14.6         NA         NA           IRON         LEAD         27.7         NA         10800         NA         NA           LEAD         27.7         NA         18.9         NA         NA           MAGNESIUM         10100         NA         18.9         NA         NA           MANGANESE         463         NA         18.9         NA         NA           MANGANESE         463         NA         NA         NA         NA           MANGANESE         463         NA         NA         NA         NA           MERCURY         0.055         J         NA         NA         NA           NICKEL         11.8         NA         8.52         NA         NA           NOTASSIUM         5030         NA         3790         NA         NA           SODIUM         347         NA         274         NA         NA           VANDIUM         21.5         NA         43.8         NA         NA           BENZYL ALCOHOL         0.032         U         NA         0.072         J         NA           FLUORANTHENE         0.032         U <td></td> <td>COBALI</td> <td>5.95</td> <td>NA</td> <td>4.57</td> <td>NA N</td> <td>Y IV</td> <td>Ç.,</td>		COBALI	5.95	NA	4.57	NA N	Y IV	Ç.,
IRON         IRON <th< td=""><td></td><td>COPPER</td><td>20.2</td><td>×Z</td><td></td><td></td><td>Y.Y</td><td>Y Y</td></th<>		COPPER	20.2	×Z			Y.Y	Y Y
LEAD         13800         NA         INA         INA </td <td>•</td> <td>IRON</td> <td>16800</td> <td>Ç. ;</td> <td>14.0</td> <td>ΝA</td> <td>NA</td> <td>Ϋ́</td>	•	IRON	16800	Ç. ;	14.0	ΝA	NA	Ϋ́
LEAD         27.7         NA         18.9         NA         NA           MAGNESIUM         10100         NA         9530         NA         NA           MANGANESE         463         NA         290         NA         NA           MERCURY         0.055         J         NA         NA         NA           NICKEL         11.8         NA         0.05         U         NA         NA           NICKEL         11.8         NA         8.52         NA         NA         NA           NOTASSIUM         5030         NA         8.52         NA         NA         NA           SODIUM         VANADIUM         21.5         NA         274         NA         NA           VANADIUM         21.5         NA         23.2         NA         NA         NA           SINC         61.9         NA         43.8         NA         NA         NA           BENZYLALCOHOL         0.032         U         NA         0.072         J         NA         NA           FLUORANTHENE         0.032         U         NA         0.072         J         NA         NA		1 TA 11	00861	A	10800	NA	N	V
MAGNESIUM         10100         NA         9530         NA         NA           MANGANESE         463         NA         290         NA         NA           MERCURY         0.055         J         NA         NA         NA           NICKEL         11.8         NA         0.05         U         NA         NA           NICKEL         11.8         NA         8.52         NA         NA         NA           POTASSIUM         5030         NA         3790         NA         NA         NA           SODIUM         347         NA         274         NA         NA         NA           VANADIUM         21.5         NA         23.2         NA         NA           ZINC         61.9         NA         43.8         NA         NA           BENZYLALCOHOL         0.032         U         NA         0.072         J         NA         NA           FLUORANTHENE         0.032         U         NA         0.072         J         NA         NA		O POPO	27.7	NA	18.9	VA.		
MANGANESE         463         NA         2930         NA         NA           MERCURY         0.055         J         NA         0.05         U         NA         NA           NICKEL         11.8         NA         0.05         U         NA         NA           NICKEL         11.8         NA         0.05         U         NA         NA           POTASSIUM         5030         NA         8.52         NA         NA         NA           SODIUM         347         NA         274         NA         NA         NA           VANADIUM         21.5         NA         23.2         NA         NA           ZINC         61.9         NA         43.8         NA         NA           BENZYLALCOHOL         0.032         U         NA         0.072         J         NA         NA           FLUORANTHENE         0.032         U         NA         0.072         J         NA         NA		MAGNESIUM	10100	MA	0000	1717	W	٧X
MERCURY         0.055         J         NA         290         NA         NA           NICKEL         11.8         NA         0.05         U         NA         NA           NICKEL         11.8         NA         0.05         U         NA         NA           POTASSIUM         5030         NA         8.52         NA         NA         NA           SODIUM         347         NA         274         NA         NA           VANADIUM         21.5         NA         23.2         NA         NA           ZINC         61.9         NA         43.8         NA         NA           BENZYL ALCOHOL         0.032         U         NA         0.072         J         NA         NA           FLUORANTHENE         0.032         U         NA         0.072         J         NA         NA		MANGANEGE	463	YN :	9530	NA A	ΝA	ΥV
NICKEL         0.055         J         NA         0.05         U         NA         NA           NICKEL         11.8         NA         8.52         NA         NA           POTASSIUM         5030         NA         8.52         NA         NA           SODIUM         347         NA         274         NA         NA           VANADIUM         21.5         NA         23.2         NA         NA           ZINC         61.9         NA         43.8         NA         NA           BENZYL ALCOHOL         0.032         U         NA         0.072         J         NA         NA           FLUORANTHENE         0.032         U         NA         0.032         U         NA         NA         NA		MEDCIEV	403	V.	290	٧٧	NA	Ž
NICKEL		MENCONI	0.055 J	NA	0.05 U	AN	V.V	
POTASSIUM         5030         NA         3790         NA         NA           SODIUM         347         NA         274         NA         NA           VANADIUM         21.5         NA         23.2         NA         NA           ZINC         61.9         NA         43.8         NA         NA           BENZYL ALCOHOL         0.032         U         NA         0.072         J         NA         NA           FLUORANTHENE         0.032         U         NA         0.032         U         NA         NA         NA		NICKEL	11.8	Ϋ́	0 67			Y.
SODIUM         347         NA         3790         NA         NA           VANADIUM         21.5         NA         274         NA         NA           ZINC         61.9         NA         43.8         NA         NA           BENZYL ALCOHOL         0.032         U         NA         0.072         J         NA         NA           FLUORANTHENE         0.032         U         NA         0.032         U         NA         NA         NA		POTASSIUM	\$030		20.0	A'A	Y V	Y Y
VANADIUM         21.5         NA         274         NA         NA           ZINC         61.9         NA         43.8         NA         NA           BENZYL ALCOHOL         0.032         U         NA         0.072         J         NA         NA           FLUORANTHENE         0.032         U         NA         0.032         U         NA         NA         NA         NA		SODIUM	0000	NA :	3790	NA	NA	Ϋ́
ZINC 21.5 NA 23.2 NA NA ZINC 61.9 NA 43.8 NA NA NA HENZYL ALCOHOL 0.032 U NA 0.072 J NA NA FLUORANTHENE 0.032 U NA 0.032 U NA 0.032 U NA 0.032 U NA 0.032 U NA 0.033		VANADITA	347	Y.	274	NA	NA	YZ.
SLINC   61.9 NA   43.8 NA NA NA NA NA NA NA NA NA NA NA NA NA		ZWZ	21.5	¥	23.2	Ϋ́N	NA	V.V.
BENZYL ALCOHOL 0.032 U NA 0.072 J NA NA PLODRANTHENE 0.032 U NA 0.032 U NA 0.032 U	CEMINOT ATTER	ZIINC	61.9	NA	43.8	Y.	Š	V 1
0.032 II NA 0.032	SEMINOLATILES	BENZYL ALCOHOL	0.032 U	NA	0.072	· V	N.A.	\ ;
		FLUORANTHENE	0.032	NA			NA.	VA

Summary of Analytes Detected in Soil for the PCB Spill Area (SWMU 32)

Surface Soil (continued)

Group	Analytes	PPB-94-07A 0.5 ft	PPB-94-08A 0.5 ft	PPS-94-01 0.5 ft	PPS-94-02	PPS-94-03	PPS-94-04
					31 (21)	11 6.0	0.5 II
METALS	ALUMINUM	NA	12.200	Ą	Y.V.	;	į
	ARSENIC	7		<b>C</b> ;	Y.	VV	NA
	DABITOR	Y.	17.7	NA	NA	NA	NA A
	DARIUM	NA A	140	NA	Ϋ́	N.	***
	BERYLLIUM	٧×	0.54	NA	¥ 14	Y :	Y.
	CADMIUM	Ą	1.7	141	Y.	V.	NA
	CALCHIM		1.2	V.	NA NA	٧V	Ϋ́
	CUPOMINA	V :	84000	VV	NA	NA	NA NA
	CINCIMICIAL	V.	, 23.8	NA	NA	NA	Y Z
	COBALI	NA	4.22	NA	NA	NA N	42
	COPPER	NA	16.6	NA	NA	Y N	V V
	IRON	VV	11400	٧X	NA N	. 414	<u> </u>
	LEAD	YZ.	737	***		VAI	Š
	MAGNESHIM		1.67	NA	V.	ΝA	NA
	THE CONTRACTION OF THE CONTRACTI	V.	9580	NA	NA	NA	V.
	MENORINESE	NA	332	ΝA	NA AN	N A	ź z
	MERCORI	NA	0.055 J	NA	NA	YZ.	ĄN
	MICKEL	NA	10.1	NA	AN	Y	: ×
	PULASSIUM	ΝΑ	4000	NA	X	Į V	V V
	SODIOM	NA	310	NA	Y Z	V.V.	
	VANADIUM	ΥZ.	8	MA		YA!	YZ.
	ZINC			Y.Y	YZ.	NA	ΝA
SEMIVOLATILES	BENZVI AI COHOI	V.	49.7	NA V	Ϋ́	NA	ΝΑ
	El Tob A METHENIE	NA :	0.032 U	NA	NA	NA VA	ΝA
	FLOORAINIHENE	×	0.032	ATA			

Summary of Analytes Detected in Soil for the PCB Spill Area (SWMU 32)

į		PPS-94-04	PPS-94-05	PPS-94-06	PPS-94-07	
Group	Analytes	0.5 ft (dup)	0.5 น	0.5 ft	0.5 ft	
METALS	ALUMINUM	Ϋ́N	11000	Ŋ	MA	
	ARSENIC	NA	16.1	Y N	<b>4</b> 7	
	BARIUM	NA	113	Y Z	C V	
	BERYLLIUM	NA	0.491	¥ X	Y Y	
	CADMIUM	NA	4.01	X	* * * * * * * * * * * * * * * * * * *	
	CALCIUM	NA	48600	N.	¥ Z	
	CHROMIUM	NA	19.7	N N	Y.V.	
	COBALT	NA	3.96	V V	. A	
	COPPER	NA	26.2	V.	Y X	
	IRON	NA	10900	Y N	· V	
	LEAD	NA	70.6	Y X	¥2	
	MAGNESIUM	NA	7800	Y.	* *Z	
	MANGANESE	NA	305	Z Z	* Z	
	MERCURY	VN	0.05 U	Y.	¥ Z	
	NICKEL	NA	8.74	Y X	¥ Z	
	POTASSIUM	NA	3390	Y Z	* * Z	
	SODIUM	NA	234	V.	Y Z	
	VANADIUM	VV	17.9	NA	÷ V	
	ZINC	NA	83.7	NA	₹ Z	
SEMIVOLATILES	BENZYL ALCOHOL	٧X	0.048 J	VV	₩.Z	
	FLUORANTHENE	NA AN	0.047	NA	<b>*</b> 7	

Summary of Analytes Detected in Soil for the PCB Spill Area (SWMU 32)

#### Subsurface Soil

ALUMINUM         ATAINTING         779         U         779         U         779         U         NA         NA           ARSENIC         4.73         4.38         NA         NA         NA           BARUM         33.9         15.8         NA         NA           CALCIUM         140000         140000         NA         NA           CHROMIUM         38.3         40.2         NA         NA           COBALT         2.5         U         NA         NA           COPER         4.12         2.5         U         NA         NA           COPER         4.12         3.24         NA         NA           IRON         963         U         963         U         NA         NA           LEAD         7.44         U         7.44         U         NA         NA           MAGNESIUM         8.310         6.310         NA         NA         NA           MANGANESE         114         17.5         U         NA         NA           NANASSUM         184         U         184         U         NA         NA           SODIUM         11.7         10.9         NA <th>į</th> <th></th> <th>PPB-94-01B</th> <th>PPB-94-01C</th> <th>PPB-94-02B</th> <th>PPB-94-02C</th> <th>DPR-04.03D</th> <th>DDD 04</th> <th>200</th>	į		PPB-94-01B	PPB-94-01C	PPB-94-02B	PPB-94-02C	DPR-04.03D	DDD 04	200
ALUMINUM         ARSENIC         473         U         779         U         NA         NA         4,030         779           BARUIN         473         4.38         NA         NA         NA         6.04         4,030         779           BARUIN         33.9         15.8         NA         NA         66.9         26         27         27         27         27         27         27	Group	Analytes	S ft	11 ft	5 ft	10 ft	4 F	FFD-94-	ر و
ALUMINUM         779         U         779         U         779         U         779         WA         NA         4,030           ARSENIC         4.73         4.38         NA         NA         6.04           BARUUM         33.9         15.8         NA         NA         6.04           CALCIUM         140000         140000         NA         NA         120000           CHROMIUM         38.3         40.2         NA         NA         18.1           COBALT         2.5         U         2.5         U         NA         NA         18.1           COPPER         4.12         3.24         NA         NA         NA         18.1           COPPER         7.44         U         2.5         U         NA         NA         17.7           LEAD         7.44         U         7.44         U         NA         NA         14.1           MAGNESIUM         8.310         6,310         NA         NA         NA         17.70           NICKEL         6.22         6.65         NA         NA         NA         17.20           VANADIUM         114         72.3         NA         NA							11.0	11 11	
ARSENIC         473         4.38         NA         NA         4,030           BARUUM         33.9         15.8         NA         NA         6.04           CALCIUM         140000         140000         140000         NA         NA         6.04           CALCIUM         140000         140000         14000         NA         NA         18.1           COPPER         2.5         U         2.5         U         NA         NA         18.1           COPPER         4.12         3.24         NA         NA         18.1         18.1           COPPER         4.12         3.24         NA         NA         NA         7.97           RON         7.44         U         7.44         U         NA         NA         7.97           MAGNESIUM         8,310         6,310         NA         NA         NA         7.760           MANGANESE         114         17.5         U         NA         NA         12.3           NICKEL         6.22         6.65         NA         NA         NA         1.20           SODIUM         11.7         10.9         NA         NA         NA         1.37 <td>METALS</td> <td>ALIMINIM</td> <td>••</td> <td>i i</td> <td></td> <td></td> <td></td> <td></td> <td></td>	METALS	ALIMINIM	••	i i					
AKSENIC         4.73         4.38         NA         NA         6.04           BARIUM         33.9         15.8         NA         6.04           CALCIUM         140000         140000         NA         NA         66.9           CHROMIUM         38.3         40.2         NA         NA         18.1           COBALT         2.5         U         2.5         U         NA         NA         18.1           COPPER         4.12         3.24         NA         NA         18.1         2.5         U           COPPER         4.12         3.24         NA         NA         18.1         U         NA         18.1         U           COPPER         4.12         3.24         NA         NA         17.9         U         NA         NA         17.6         NA         NA         17.3         U         NA         NA         17.3         U         NA         NA         17.3         U         NA         NA         17.2         U         NA         NA         17.2			0 6//	0 6//	A V	Ϋ́	4.030	770	11
BARUUM         33.9         15.8         NA         NA         6.04           CALCIUM         140000         140000         NA         NA         66.9           CHROMIUM         38.3         40.2         NA         NA         120000           COBALT         2.5         U         2.5         U         2.5         U         18.1           COBALT         2.5         U         2.5         U         NA         NA         18.1           COBALT         2.5         U         2.5         U         NA         NA         18.1           COPER         4.12         2.5         U         NA         NA         18.1           IRON         963         U         NA         NA         7.97           MAGNESIUM         8,310         6,310         NA         NA         14.1           MANGANESE         114         17.5         U         NA         NA         17.3           NICKEL         6.22         6.65         NA         NA         17.3           NICKEL         6.22         6.65         NA         NA         17.2           VANADIUM         114         72.3         NA		ARSENIC	4.73	4 38	NA	***		2	>
CALCIUM         15.8         NA         NA         66.9           CALCIUM         140000         140000         NA         NA         66.9           CHROMIUM         38.3         40.2         NA         NA         120000           COPALT         2.5         U         2.5         U         NA         NA         18.1           COPPER         4.12         3.24         NA         NA         18.1         2.5         U           COPPER         4.12         3.24         NA         NA         18.1         18.1         NA         18.1         NA         18.1           IRON         AGNESIUM         8,310         6,310         NA         NA         14.1         NA         7,760           MANGANESE         114         17.5         U         NA         NA         14.1         NA         14.1           NICKEL         6.22         6.65         NA         NA         NA         1,200           SODIUM         114         72.3         NA         NA         1,200           VANADIUM         11.7         U         NA         NA         1,200           SINC         10.9         NA         <		BARIIM			4	¥.	6.04	<del>4</del> .8	
CALCIUM         140000         14000         140000<		Monug	33.9	15.8	NA	V.	0 99	1 36	
CHROMIUM         38.3         40.2         NA         NA         120000           COBALT         2.5         U         2.5         U         NA         NA         18.1           COBALT         2.5         U         2.5         U         NA         NA         18.1           COBALT         4.12         2.5         U         NA         NA         7.97           RON         4.12         3.24         NA         NA         7.97         18.1           RON         7.44         U         7.44         U         NA         NA         7.97           MAGNESIUM         8,310         6,310         NA         NA         14.1         17.5         U         NA         14.1           MANGANESE         114         17.5         U         NA         NA         12.3         U         12.3           NICKEL         6.22         6.65         NA         NA         NA         1.20           VANADIUM         114         72.3         NA         NA         1.30           VANADIUM         11.7         10.9         NA         NA         NA         21.6           BENZYL ALCOHOL         0.032		CALCIUM	140000	140000	Y.V			1.07	
COBALT         2.5         U         A0.2         NA         NA         18.1           COBALT         2.5         U         NA         NA         2.5         U           COPPER         4.12         3.24         NA         NA         2.5         U           RON         4.12         3.24         NA         NA         7.97         2.5         U           RON         4.12         3.24         NA         NA         NA         7.97         1.97         1.97         1.97         1.97         1.97         1.97         1.97         1.97         1.97         1.97         1.97         1.90         1.23         1.23         1.23         1.20         1.23         1.20<		CHROMITIN	,	2000	W	NA NA	120000	130000	
COBALIT         2.5         U         NA         NA         2.5         U           COPPER         4.12         3.24         NA         NA         7.97           RON         963         U         NA         NA         7.97           LEAD         7.44         U         7.44         U         NA         NA           MAGNESIUM         8,310         6,310         NA         NA         14.1           MANGANESE         114         17.5         U         NA         NA         17.60           NICKEL         6,22         6,65         NA         NA         NA         6.01           POTASSIUM         184         U         184         U         NA         NA         1,200           VANADIUM         114         72.3         NA         NA         NA         137           ZINC         10.9         18.7         NA         NA         NA         20.69         J           BENZYL ALCOHOL         0.032         U         0.032         U         NA         NA         20.69         J           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         NA         NA		CITICOLATICIAL	38.3	40.2	ΥN	Ϋ́N	200	15.4	
COPPER         4.12         3.24         NA         NA         2.3         U         2.3         U         NA         NA         7.97         O.032         U         NA         A.13         U         7.24         U         NA         NA         7.76         U         NA         NA         14.1         NA         NA         NA         14.1         NA		COBALT	2.5 U	2.5 U	NA	<b>Y</b> Z		1.00	į
IRON         963         U         963         U         NA         7.97           LEAD         7.44         U         7.44         U         NA         14.1           MAGNESIUM         8,310         6,310         NA         NA         14.1           MANGANESE         114         17.5         U         NA         NA         7,760           MANGANESE         114         17.5         U         NA         NA         12.3           NICKEL         6.22         6.65         NA         NA         12.3           POTASSIUM         184         U         184         U         NA         12.3           SODIUM         114         72.3         NA         NA         11.20           VANADIUM         11.7         10.9         NA         NA         13.7           ZINC         10.9         NA         NA         NA         26.2           BENZYL ALCOHOL         0.032         U         0.032         U         NA         NA         0.069         J           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         NA         NA         0.069         J		COPPER	2.7		4774	CVI	0 6.2	2.5	Þ
LEAD         963         U         963         U         NA         NA         963         U           LEAD         7.44         U         7.44         U         7.44         U         NA         NA         14.1           MAGNESIUM         8,310         6,310         NA         NA         7,760           NICKEL         6.22         6.65         NA         NA         7,760           NICKEL         6.22         6.65         NA         NA         6.01           POTASSIUM         184         U         184         U         NA         1,200           SODIUM         114         72.3         NA         NA         1,200           VANADIUM         11.7         10.9         NA         NA         21.6           ZINC         10.9         15.7         NA         NA         26.2           BENZYL ALCOHOL         0.032         U         0.032         U         NA         NA         0.069         J           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         NA         NA         0.069         J		NOM	4.12	3.24	Y X	VΑ	7.97	5 91	
LEAD         7.44         U         7.44         U         7.44         U         NA         NA         14.1           MAGNESIUM         8,310         6,310         NA         NA         7,760           MANGANESE         114         17.5         U         NA         7,760           NICKEL         6.22         6.65         NA         NA         123           NICKEL         6.22         6.65         NA         NA         6.01           POTASSIUM         184         U         184         U         NA         NA         1,200           SODIUM         114         72.3         NA         NA         NA         137           ZINC         10.9         NA         NA         NA         21.6           BENZYL ALCOHOL         0.032         U         0.032         U         NA         NA         0.069         J           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         NA         NA         0.069         J		IRON	963 U	063 U	X	NA	11 000	7.70	:
MAGNESIUM         8,310         6,310         NA         NA         14.1           MANGANESE         114         17.5         U         NA         NA         7,760           NICKEL         6.22         6.65         NA         NA         123           POTASSIUM         184         U         184         U         NA         NA         6.01           SODIUM         114         72.3         NA         NA         137           ZINC         11.7         10.9         NA         NA         21.6           ZINC         10.9         15.7         NA         NA         26.2           BENZYL ALCOHOL         0.032         U         0.032         U         NA         NA         0.069         J           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         NA         NA         0.069         J		LEAD	7.4.4	111			963	963	<b>&gt;</b>
MANGANESE         8,310         6,310         NA         7,760           MANGANESE         114         17.5         U         NA         7,760           NICKEL         6.22         6.65         NA         NA         123           POTASSIUM         184         U         184         U         NA         NA         6.01           SODIUM         114         72.3         NA         NA         137           ZINC         11.7         10.9         NA         NA         21.6           BENZYL ALCOHOL         0.032         U         0.032         U         NA         NA         26.2           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         NA         NA         0.069         J		MACNIESTINA	0 1::	O ++./	Y Z	VV	14.1	7.44	1
MANGANESE         114         17.5         U         NA         NA           NICKEL         6.22         6.65         NA         NA         123           POTASSIUM         184         U         184         U         NA         6.01           SODIUM         114         72.3         NA         NA         137           VANADIUM         11.7         10.9         NA         NA         21.6           ZINC         10.9         15.7         NA         NA         26.2           BENZYL ALCOHOL         0.032         U         0.032         U         NA         NA         26.2           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         NA         NA         0.069         J		MAGNESIOM	8,310	6,310	NA	×	7 760	7 060	)
NICKEL         6.22         6.65         NA         NA         6.01           POTASSIUM         184         U         184         U         NA         6.01           SODIUM         114         72.3         NA         NA         1,200           VANADIUM         11.7         10.9         NA         137           ZINC         10.9         15.7         NA         NA         21.6           BENZYL ALCOHOL         0.032         U         0.032         U         NA         NA         26.2           DI-N-BUTYL PHTHALATE         1.3         U         13         U         NA         NA         0.069         J		MANGANESE	114	17 5 11	N.A	***		2000	
POTASSIUM         184         U         184         U         NA         6.01           SODIUM         114         72.3         NA         NA         1,200           VANADIUM         11.7         10.9         NA         NA         137           ZINC         10.9         NA         NA         21.6           BENZYL ALCOHOL         0.032         U         NA         NA         26.2           DI-N-BUTYL PHTHALATE         1.3         U         13         U         NA         NA         0.069         J		NICKEI.	700		V.	Y.	123	103	
SODIUM		DOTAGETIMA		0.00	NA	¥	6.01	7.83	
SOLIOM         114         72.3         NA         NA         137           VANADIUM         11.7         10.9         NA         NA         21.6           ZINC         10.9         15.7         NA         NA         26.2           BENZYL ALCOHOL         0.032         U         NA         NA         0.069         J           DI-N-BUTYL PHTHALATE         1.3         11         1.3         11         NA         NA         0.069         J		rot Assion		184 U	NA	NA	1.200	1 170	
VANADIUM         11.7         10.9         NA         NA         21.6           ZINC         10.9         15.7         NA         26.2           BENZYL ALCOHOL         0.032         U         0.032         U         NA         0.069         J           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         1.3         U         NA         0.069         J		SOUIOM	114	72.3	NA	Y.	137	7 70	
ZINC 10.9 15.7 NA NA 21.6  BENZYL ALCOHOL 0.032 U 0.032 U NA NA 0.069 J  DI-N-BUTYL PHTHALATE 1.3 11 13 11 NA 0.069 J		VANADIUM	11.7	0 01	Y IX			70.7	
BENZYL ALCOHOL 0.032 U 0.032 U NA NA 0.069 J DI-N-BUTYL PHTHALATE 1.3 U 13 U 14 U NA NA 0.069 J		ZINC		10.3	IVA	Y.	21.6	21.3	
BENZYL ALCOHOL  0.032 U  0.032 U  NA  NA  0.069 J  DI-N-BUTYL PHTHALATE	CENTROL ATTENDE		10.9	15.7	ΝΑ	NA	26.2	21.2	
1.3 II 13 II NA NA NA NA NA NA NA NA NA NA NA NA NA	SCIMILYOLATILES	BENZYL ALCOHOL	0.032 U	0.032 U	NA	Y.	1 090 0	21.2	=
		DI-N-BUTYL PHTHALATE	1.3	13 11	N.A.		f (00'0	0.032	<b>-</b>

Summary of Analytes Detected in Soil for the PCB Spill Area (SWMU 32)

Subsurface Soil (continued)

		PPB-94-04B	PPB-94-04C	PPB-94-05B	PPB-94-05C	PPB-94-06R	PPR-04-06C
Group	Analytes	5 ft	11 ft	5 ft	11 ft	5 ft	11 11
METAIC	7 41 11417 41 1 4	;					
MEINE	ALUMINUM	NA V	Y Y	NA	NA	NA	Ϋ́Z
	ARSENIC	NA	NA	NA	NA	AZ	N N
	BARIUM	NA	YZ.	NA.	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	VIV.	
	CALCIUM	N.	Y Z	Y.	V 12	V 1	Ϋ́ .
	CHDOMILIM				V.	<b>Y</b> Y	ď.
	CHINOMICIA	¥Z,	NA	Y.	NA	NA	NA
	COBALT	NA	NA	NA	NA	NA.	NA NA
	COPPER	NA	YN.	NA	Y'N	NA.	. V
	IRON	ΝA	NA	NA	NA.	Y X	Y Z
	LEAD	NA	NA	NA	YZ	Y Z	V Z
	MAGNESIUM	NA	NA	××	Y Z	Y N	4 12
	MANGANESE	NA	NA.	V.V			V
	I I I I I I I I I I I I I I I I I I I			V	Y.	A	ΝΑ
	MICHEL	ŠZ.	Y V	٧V	NA	Ϋ́	YZ.
	POTASSIUM	ΥN	NA	NA	Y'N	NA	¥Z
	SODIUM	Ϋ́	Y.	٧X	Ą	V.	MA
	VANADIUM	VN	Y.	Y.	Y N	C 2	ζ., 
	ZINC	N.	NA.	V V	N.A.		¥21
SEMIVOLATILES	BENZYL ALCOHOL	NA	Y N	. Y		¥.	Y Y
	DI N DITTY DITTIAL ATE		1111	5	Y.	NA V	V.
	DI-IV-BOI IL FRIMALAIE	NA	NA	NA	NA	XX	Y

Summary of Analytes Detected in Soil for the PCB Spill Area (SWMU 32)

		PPB-94-07B	PPB-94-07C	PPB-94-08B	PPB-94-08C	
Group	Analytes	5 ft	10 ft	5 ft	13 ft	
METALS	ALUMINUM	NA	NA	8,320	5.510	
	ARSENIC	NA	NA	7.22	5.78	
	BARIUM	NA	NA	87.9	\$0.5	
	CALCIUM	NA	NA	00086	00001	
	CHROMIUM	NA	AN	33,3	54	
	COBALT	V <sub>N</sub>	NA	2.72	2.5 11	
	COPPER	NA	Ϋ́	10.4	5.49	
	IRON	NA	VX	7,320	5.230	
	LEAD	NA	NA	15	7.44	
	MAGNESIUM	××	NA	8430	00601	
	MANGANESE	NA	NA	182	140	
	NICKEL	NA	VV	7.04	611	
	POTASSIUM	NA	NA	2600	1790	
	SODIUM	NA	Ϋ́	206	146	
	VANADIUM	NA	Y.	13.9	5.71	
	ZINC	NA	Ϋ́	31.3	22 4	
SEMIVOLATILES	BENZYL ALCOHOL	NA	N.	0.032	11 000	
	DI-N-BUTYL PHTHALATE	NA	NA.	1.3	0 2000	
All values are in male fame	(			211	0.1	

All values are in µg/g (equal to ppm)

NA = Not analyzed

U = Not detected; value is the Certified Reporting Limit

Dup = Duplicate analysis

J = Value is estimated

Summary of Analytes Detected in Soil for the Wastewater Spreading Area (SWMU 35)

Surface Soil

Analytes         Off         Off         Off           ALUMINUM         NA         NA         NA         NA           ALUMINUM         NA         NA         NA         NA           ALUMINUM         NA         NA         NA         NA           ARSENIC         240         U         2.6         23           ARSENIC         240         U         72         U         72         U           BARUM         0.078         U         0.078	1		WSS-92-01	WSS-92-02	WSS-02-03	VO CO 33/X1	TO TO LOCAL	
NITRATE ALUMINUM NA NA NA NA NA NA NA NA NA NA NA NA NA	Group	Analytes	n 0 ft	1) 0	0 11	1133-32-04 0 ft	WSS-92-05	WSS-92-06
NUTRATE         6.15         5.14         2.6         23         4.8         4.6           ALUMINUM         NA         NA         NA         NA         NA         NA         NA           ALUMINUM         NA         NA         NA         NA         NA         NA         NA           BARULL         150         120         120         72         U         72         U         240         120           BERYLLUM         0.078         U         0.078	2.10.11							11 0
ALUMINUM         NA         NA         A.5         A.5         A.8         A.6           ARSENIC         240         U         240         U         240         U         72         U         72         U         240         U	ANIONS	NITRATE	6.15	5.14	7 6	,		
240 U 240 U 72 U 72 U 24 U 240 U 120	METALS	ALUMINUM	27		0.3	67	8.8	4.6
240         U         240         U         72         U         72         U         72         U         240         U         240         120         1		ADCENIO	V.	NA V	NA	NA	×	Y.V
150		ANDEINIC	240 U	240 11		11	;	Y.
0.078 U 0.078 U 0.078 U 0.078 U 0.078 U 0.078  0.424 U 0.424 U 0.424 U 0.424 U 0.078 U 0.078  18.4 18.1 14.7 20.6 16.2 15.7  NA NA NA NA NA NA NA NA NA NA NA NA NA N		BARIUM	150	120		0 7/	74 O	240 U
0.424 U 0.424 U 0.078 U 0.078 U 0.078 U 0.078  18.4 18.1 14.7 20.6 16.2 15.7  NA NA NA NA NA NA NA NA NA NA NA NA NA N		BERYLLIUM		120		170	120	120
18.4 18.1 14.7 20.6 16.2 15.7  NA NA NA NA NA NA NA NA NA NA NA NA NA N		CADMITIM		0.0/8			0.078 U	0.078
18.4     18.1     14.7     20.6     16.2     15.7       NA     NA     NA     NA     NA       21     28     12.5     8.98     22.5     15.6       19000     17000     13000     22.0     14000     16000       82     77     35     17     130     57       NA     NA     NA     NA     NA     NA       NA     NA     NA     NA     NA       0.026     U     0.026     U     0.026     U     0.026       2.46     U     2.46     U     2.46     U     2.46     U     2.46     U       NA     NA     NA     NA     NA     NA       NA     NA     NA     NA     NA       NA     NA     NA     NA     NA       NA     NA     NA     NA     NA       NA     NA     NA     NA     NA       110     120     53     67     0.075		CIRCUMA		0.424 U				
NA		CHROMIUM	18.4	18.1	14.7			
21 28 12.5 8.98 22.5 15.6 19000 82 17000 13000 220000 140000 160000 82		COBALT	<b>*</b> Z	VIV		0.02	7.01	15.7
19000 17000 13000 22000 14000 16000 16000 82		COPPER		¥4 .	Z Z	٧×	ΝA	NA
19000 17000 13000 22000 14000 16000 82 77 35 17 130 57 130 57 130 57 14000 160		NOGI	17	28	12.5	8.98	22.5	15.6
82 77 35 17 130 57 10000 1000 1		NON.	19000	17000	13000	22000	14000	2007
NA NA NA NA NA NA NA NA NA NA NA NA NA N		LEAD	82	11	35		14000	00001
NA NA NA NA NA NA NA NA NA NA NA NA NA N		MAGNESIUM	V.V.			1.	130	57
0.026 U 0.026 U 0.026 U 0.026 U 0.036 U 0.026 U 0.026 U 0.026 U 0.036 U 0.026 U 0.036 U 0.026 U 0.036 U 0.026 U 0.036		MANGANEGE		V.	NA V	ΝA	VV	Ϋ́Z
UM NA NA NA NA NA NA NA NA NA NA NA NA NA		MEDITION	INA	NA	NA	NA	×	<b>Y</b> Z
UM NA NA NA NA NA NA NA NA NA NA NA NA NA		NICKEI		0.026 U	0.026 U	0.026 U	0.036	11 9000
UM NA NA NA NA NA NA NA NA NA NA NA NA NA		MCNEL		2.46 U	2.46 U	2.46 11		
0.252 0.355 0.24 0.345 0.479  NA NA NA NA NA NA NA NA NA NA NA NA NA N		POTASSIUM	NA	N.	Y Z	NA		
UM NA NA NA NA NA NA NA NA NA NA NA NA NA		SILVER	0.252	0 366		¥2.	۷ ۷	۷×
DIUM NA NA NA NA NA NA NA NA NA NA NA NA NA		SODILIM	777	0.555	0.24	0.345	0.479	0.234
110 120 53 67 700		VANADHIM	YZ :	NA	٧X	NA	¥X	V N
110 120 53 67 700		MODOM	NA	ΝΑ	NA	NA	Z Z	Y 7
		ZINC	110	120	53	69		144 144 144 144 144 144 144 144 144 144

Summary of Analytes Detected in Soil for the Wastewater Spreading Area (SWMU 35)

Surface Soil (continued)

2002		WSS-92-01	WSS-92-02	WSS-92-03	WSS-92-04	WCC.02.05	The second
DECTICIONS	Analytes	ນ 0	n 0	20		0.26-00	90-76-SSW
TO LINES	ALDRIN	٧N	AN	NA		11 0	0 11
	ALPHA CHLORDANE	YZ	VIV	V :	NA	NA NA	ΝΑ
	ALPHA-ENDOSULFAN	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Y .	Š	Y Z	V.	NA
	ממומס זער	<b>Y</b> :	¥ ;	۷ ۷	VV	Y.	Y
		V.	¥Z	NA	NA	N	Ž
		۷ ۷	Y'N	ΝA	XX	Į Z	MA
	NZENEHEXACHLORIDE	٧	NA	NA	. V	V V	¥ ;
		ΝĀ	Ϋ́	× 2		IVA	V.
	ENDOSULFAN SULFATE	Ϋ́	· V	V .	V	Ϋ́	VV
		. ×		Y !	٧×	V.	NA
	ENDRIN ALDEHYDE	<u> </u>	V :	٧×	NA	NA	N A
		٧× :	¥ ;	Ϋ́	NA	٧×	Y X
	ANIC	Y :	VA	NA	٧٧	NA	. ×
		ď į	۷ ۷	VV	ΝΑ	× Z	C V
		Y V	ΝΑ	NA	V.	. v	V 42
	LOREPOXIDE	٧×	NA	××	\ Z	V 712	٧× :
	ШZ	Y'A	X	× Z	Y N	\ <u>\</u>	Š.
	PPDDD	NA NA	N N	141 141	KA :	۲ ۷	Ϋ́
	PPDDE	Ž	C *	VZ :	V.	VV	٧×
	PPDDT	Y X	¥N.	NA V	Y.	NA	YZ
SEMIVOLATILES	7		Š.	ΝΑ	Y Y	VX VX	Y Z
			0.29 U			0 29 11	11 07 0
			10 J				-
			1 UJ			-	
	ACHLORIDE	0.36 U					I UJ
			0.2				
	ATE	0.52	0.33	2.0	7:0	0.2 UJ	0.2 UJ
	DELTA-BENZENEHEXACHLORIDE	0.29					0.33 UJ
	DIELDRIN		-	0.29		0.29 U	0.29 U
	ENDOSULFAN SULFATE	_	-				0.3 U
			-				0.2 UJ
	ENDRIN KETONE	_		0.41 U		0.41 U	0.41 U
	ANE		0.2 UJ	-			0.2
				NA			3
	adivoda	0.28 U		0.28 U	0.28 U	0.28	
		0.36 U	0.36 U	0.36 U	0.36 U	11 92 0	
	ŭ Z		0.43 U	0.43 U	0.43 U	0.53	0.30
		0.18 UJ	0.18 UJ	0.18 UJ	_	_	0.43
		0.22 UJ	0.22 UJ			•	
	PPDDT	0.41 U	0.41 111	0.41		0.22	0.22 UJ

Summary of Analytes Detected in Soil for the Wastewater Spreading Area (SWMU 35)

Surface Soil (continued)

į		WSS-94-01	WSS-94-02	WSS-94-03	WSS-94-04	WSS-94-05	WSS-94-06
Group	Analytes	0.5 ft					
ANIONS	NITRATE	VN	×z.	¥Z.	ž	Š	Ą
METALS	ALUMINUM	NA	ΝA	VN	Ϋ́Z	×	Y X
	ARSENIC	Ϋ́	Y'A	VV	NA.	ζ.	Z Z
	BARIUM	NA	NA	NA	ΥN	\Z	Y Z
	BERYLLIUM	NA	NA	NA	VN VN	YZ.	Y Z
	CADMIUM	VV	۷۷	NA	ΥN	VV	Ž
	CHROMIUM	NA	NA	NA	VV	NA	V V
	COBALT	۷۷	NA	NA	٧×	NA VA	v z
٠	COPPER	NA	, NA	NA	NA	NA AN	\Z
	IRON	NA	NA	NA	NA	NA	×
	LEAD	NA	NA	NA	NA	NA	×z
	MAGNESIUM	NA	NA	NA	Ϋ́	NA	YZ.
	MANGANESE	NA	NA NA	NA	NA	NA	YZ.
	MERCURY	NA	NA	NA	NA	NA	V.
	NICKEL	NA	NA	NA	NA	VX VX	Ž
	POTASSIUM	VV	NA	NA	NA	VV	٧×
	SILVER	NA	NA	NA	NA	NA	NA
	SODIUM	NA	NA	NA	NA	NA	NA
	VANADIUM	NA	NA	NA	NA	۷×	NA
	ZINC	NA	NA	NA	Ϋ́	٧×	Y

Summary of Analytes Detected in Soil for the Wastewater Spreading Area (SWMU 35)

Surface Soil (continued)

3		WSS.	WSS-94-01	WSS	WSS-94-02	WSS	WSS-94-03	WSS	WSS-94-04	WSG	WSC.04.05	70 70 33M	8
PECTICINES	Analytes	0.5 ft	2	0.5	0.5 ft	0.5 ft	=	0.5 ft	2	0.5 6	3 =	0.50	00-1
COLOR	ALUKIN	0.001	n	0.00		0.018	ſ	0.00	=	000	=		
	ALPHA CHLORDANE	0.013		0.004	n	0.243		0.004	) <u> </u>	100.0	> <u>E</u>	0.00	3
	ALPHA-ENDOSULFAN	0.001	n	0.001	Ω	0.017	-		3 =	3.0	3:	0.05	
	<b>BETA-BENZENEHEXACHLORIDE</b>	0.008	n	0.00	· =	3000	· =	30.0	<b>&gt;</b> ;	0.001	<b>-</b>	0.003	_
	BETA-ENDOSULFAN	000	=	9	) <u>=</u>	00.0	3 •	0.00	<b>-</b>	0.008	Þ	0.008	n
	DELTA-BENZENEHEXACHI ORIDE	000	3 E	3.0	<b>)</b> ;	0.018	<b>-</b> , ,	0.001	ב	0.001	Ω	0.001	m
	DIELDRIN	6.00	3 -	600.0	<b>&gt;</b> ;	0.039	-	0.000	n	0.00	ם	0.00	n
	ENDOSTII FAN SIII FATE	700.0	- ;	0.007	<b>D</b>	0.003	-	0.002	n	0.005	Ω	0.00	111
	FNDRIN	0.001	3	0.001	n	0.016	<b>-</b>	0.00	n	0.001	m	000	3 =
	ENDEN AT PETITOR	0.015	<b>-</b>	0.00	n	0.16	_	0.007	n	0.00	: =	0.00	3 -
	ENDRIN VETTONI	0.001	£	0.001	n	0.007	-	0.001	Ω	0.00	) <b>=</b>	20.0	,
	CAMMA CIII OND AND	0.001	E	0.001	m	0.001	ī	0.001	n	0.001	) <u>=</u>	2000	3 E
	UEDTACIII OD	0.015		0.004	Ω	0.203		0.004	m	0.004	5 =	0.037	3
	HEDTACHI OBEROXINE	0.002	5	0.002	n	0.002	Ω	0.002	Ω	0.002	: 1	0000	111
	I INDANE	0.001	S :	0.001	D	0.014	_	0.001	n	0.001	n	0.01	} <b>-</b>
	מחממ	0.001	5	0.001	n	0.014	-	0.001	Ω	0.001	- =	000	, E
	מממזי	0.01	_	0.026		0.012	_	0.005		0.007	)	0.00	<u> </u>
	PRIDE	0.011	_	0.036		0.036	-	0.028		0.062		131	
CEMINO! ATH ES	rruni	0.042	_	0.049		0.01	•	0.015		0.037		2000	- ·
SEMINOLATILES	ALDRIN	Ϋ́		٧X		Ϋ́		X		(S) Y		2,0.0	-
	ALPHA CHLORDANE	Ϋ́		Ϋ́		Ϋ́		Y X				¥ ;	
	ALPHA-ENDOSULFAN	Ν		Ϋ́		N A		ž		<b>X X</b>		¥ X	
	BEIA-BENZENEHEXACHLORIDE	Ϋ́		Ϋ́		ΝA		Z		ζ <b>γ</b>		¥ 2	
	BEIA-ENDOSULFAN	ΝA		Ϋ́		N		Y Z				<u> </u>	
	BUTYLBENZYL PHTHALATE	Ϋ́		Ν		Ž		. ×		<b>X X</b>		YZ :	
	DELTA-BENZENEHEXACHLORIDE	ž		NA		Ϋ́		<b>4</b> 2		<b>X</b>		Š	
	DIELDRIN	۲×		Ν		N N		Z Z		< ×		۲ :	
	ENDOSULFAN SULFATE	NA		NA A		×N		V Z		<b>Y X</b>		Υ :	
	ENDRIN	ΝA		Ϋ́		X		: ×		<u> </u>		Z :	
	ENDRIN KETONE	Ϋ́N		×		2				۲ ا		NA	
	GAMMA CHLORDANE	Ϋ́		, A				\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		۷ Z		ΝA	
	HEPTACHLOR	Ž		V V		<b>S</b> :		Υ <sub>Σ</sub>		NA		٧×	
	HEPTACHLOREPOXIDE			ξ <u>τ</u>		¥ ;		۷ Z		ΝA		٧×	
	LINDANE			< :		Y Z		ž		Ϋ́		٧×	
	PPUND	<b>4</b> .		Y :		Y N		ΝA		٧×		×	
	PPDDF	۲ :		Y :		۲		NA		Ϋ́		×	
	TOUGH	2		N N		٧		Ϋ́		X		Y	
	ITEDUI	NA		WA	į	Ν		ΝA		Y N			

Summary of Analytes Detected in Soil for the Wastewater Spreading Area (SWMU 35)

		WSS-94-07	WSS-94-08	WSS-94-09	WSS-94-09	WSS-94-10	WSS-94-11
Group	Analytes	0.5 ft	0.5 น	0.5 ft	0.5 ft (dup)	0.5 ft	0.5 ft
ANIONS	NITRATE	٧×	NA	۷۷	NA V	Ϋ́Z	Y Z
METALS	ALUMINUM	NA	NA	VV	٧×	Y Z	Y X
	ARSENIC	NA AN	NA	VV	NA VA	NA	Y X
	BARIUM	VV	NA A	NA	NA AN	NA	NA
	BERYLLIUM	NA	NA	NA	NA	NA	×Z
	CADMIUM	NA	NA	NA	NA	NA	٧٧
	CHROMIUM	VV	NA	NA	NA	٧٧	VV
	COBALT	NA	NA	NA	NA	NA	٧٧
	COPPER	NA	, NA	NA	NA	VV	NA
	IRON	NA	NA	NA	NA	۷۷	NA NA
	LEAD	NA	NA V	NA	NA	NA NA	NA
	MAGNESIUM	VN	NA	NA	NA	ΥV	V
	MANGANESE	NA	٧×	NA VA	NA	NA	Y Z
	MERCURY	NA	NA	NA	NA	NA	NA NA
	NICKEL	VN	NA	NA	NA	NA	NA AN
	POTASSIUM	VN	NA	NA	NA	NA	Š
	SILVER	NA	NA	NA	NA	٧٧	Ϋ́Α
	SODIUM	NA	NA	NA	NA	NA	NA
	VANADIUM	NA	NA	NA	NA	NA	٧٧
	ZINC	NA	Ϋ́Υ	ΝΑ	NA	NA	٧٧
		NA	NA	NA	NA	××	Ϋ́Z

Summary of Analytes Detected in Soil for the Wastewater Spreading Area (SWMU 35)

Surface Soil (continued)

		WSS-94-07	4-07	WSS-94-08	94-08	WSS	WSS-94-09	WSS-94-09	94-09	WSS-94-10	94-10	WSS-94-11	=
Group	Analytes	0.5 ft	ایع	0.5 ft	ے	0.6	0.5 ft	0.5 ft (dup)	(dnp)	0.5 ft	z	0.5 ft	
PESTICIDES	ALDRIN	0.001	m	0.001	UJ	0.001	m	0.001	m	0.001	n	0.001	n
	ALPHA CHLORDANE	0.187		0.105		0.008		0.00		0.004	m	0.004	m
	ALPHA-ENDOSULFAN	0.38	•	900.0	ſ	0.001	m	0.001	m	0.001	Ω	0.001	Ω
	BETA-BENZENEHEXACHLORIDE	0.16	ı	0.008	Ω	0.008	m	0.008	m	0.008	Ω	0.008	n
	BETA-ENDOSULFAN	0.001	m	0.001	Ω	0.001	m	0.001	m	0.001	n	0.001	Ω
	DELTA-BENZENEHEXACHLORIDE	2.4	-	0.00	Ω	0.00	Ω	0.00	U	0.00	U	0.00	Ω
	DIELDRIN	0.034	ſ	0.007	-	0.00	n	0.00	n	0.002	Ω	0.007	Ω
	ENDOSULFAN SULFATE	0.037	ı	0.001	m	0.001	ñ	0.001	n	0.001	m	0.001	n
	ENDRIN	4	_	0.042	_	0.007	n	0.007	E	0.007	D	0.00	n
	ENDRIN ALDEHYDE	0.016	J	d.001	m	0.001	IJ	0.001	m	0.001	Ω	0.001	Ω
	ENDRIN KETONE	0.009	1	0.001	m	0.001	n)	0.001	m	0.001	m	0.001	m
	GAMMA-CHLORDANE	0.158		0.078		900.0		0.007		0.004	n	0.004	n
	HEPTACHLOR	0.15	1	0.00	m	0.002	n	0.002	m	0.002	Ω	0.00	Ω
	HEPTACHLOREPOXIDE	0.25	'n	0.00	_	0.001	Ω	0.007	r	0.001	Ω	0.001	Ω
	LINDANE	0.041	-	0.001	m	0.001	n	0.001	Б	0.001	n	0.001	Ω
	PPDDD	0.11	_	0.003	n	0.003	m	0.003	m	0.003	Ω	0.003	n
	PPDDE	99.0	_	0.05	ſ	9000	<b>-</b>	0.007		0.019		0.003	Ω
	PPDDT	0.026	_	0.007	_	0.00	<u>.</u>	0.007	ſ	0.008		0.004	Ω
SEMIVOLATILES	ALDRIN	NA		Ν		NA		NA		X		NA	
	ALPHA CHLORDANE	۷X		Ϋ́		NA		Ν		٧X		N	
	ALPHA-ENDOSULFAN	Ν		٧X		Ν		٧X		Ϋ́		VV	
	BETA-BENZENEHEXACHLORIDE	NA.		Ϋ́		Ϋ́		NA		Ϋ́		NA	
	BETA-ENDOSULFAN	٧X		٧X		ΝA		Ϋ́		NA		Ν	
	BUTYLBENZYL PHTHALATE	٧X		٧Z		Ϋ́		۲×		۷		٧×	
	DELTA-BENZENEHEXACHLORIDE .	Ϋ́		٧Z		Ϋ́Z		Y Z		Ϋ́N		VΑ	
	DIELDRIN	Ϋ́		٧N		Ν		۲		٧×		NA	
	ENDOSULFAN SULFATE	VA		٧X		Ϋ́		N		Y Y		Ν	
	ENDRIN	٧×		۲×		Ϋ́		۷		Ϋ́		V	
	ENDRIN KETONE	٧X		ΥN		Ϋ́		۷		NA		ΥN	
	GAMMA CHLORDANE	Ν		ΝA		٧×		Ϋ́		NA		٧×	
	HEPTACHLOR	٧V		٧		Ϋ́Z		Ϋ́		AN		٧X	
	HEPTACHLOREPOXIDE	٧X		٧X		٧		NA		V V		٧V	
•	LINDANE	ΝΑ		٧×		ΥN		NA		Ϋ́		Ϋ́	
	PPDDD	NA		ÝZ		Ϋ́		۷V		Y X		ΝA	
	PPDDE	Ϋ́Z		Ϋ́Z		Ϋ́		Ν		Ν		Ν	
	PPDDT	NA		Ϋ́		VV		NA		NA		W	

Summary of Analytes Detected in Soil for the Wastewater Spreading Area (SWMU 35)

Group	Analytes	WSS-94-12 0.5 ft	4-12 r	WSS-94-13	04-13 ft	WSS-94-14	4-14	WSS-94-15	4-15 Fe	
						Co		Con	11	
ANIONS	NITRATE	Ϋ́		Ϋ́		Ϋ́		Y.		
METALS	ALUMINUM	19200		14000		15100		19500		
	ARSENIC	32		16.3		19.1		15.6		
	BARIUM	179		153		162		195		
	BERYLLIUM	0.736		0.621		0.653		0.918		
	CADMIUM	1.32		1.2	n	1.43		1.2	n	
	CHROMIUM	15700		39000		23200		43300		
	COBALT	18.9		14.4		91		19.8		
	COPPER	7.27		5.78		6.11		7.8		
	IRON	23.3		17.7		22.5		20.6		
	LEAD	20000		15800		17000		20900		
	MAGNESIUM	69		39.6		59.5		49.6		
	MANGANESE	10800		9850		9480		11700		
	MERCURY	663		475		579		564		
	NICKEL	0.02	Ω	0.02	Ω	0.05	n	0.05	Ω	
	POTASSIUM	13.9		11.8		13.1		15.1		
	SILVER	6850		4960		2160		7030		
	SODIUM	0.803	Ω	0.803	Ω	0.803	Ω	0.803	Ω	
	VANADIUM	252		221		244		569		
	ZINC	19.5		17.3		16.2		20.4		
		130		75.2		125		101		

Summary of Analytes Detected in Soil for the Wastewater Spreading Area (SWMU 35)

Surface Soil (continued)

ţ		WSS-94-12		WSS-94-13		WSS-94-14	14	WSS-94-15	74-15	
Group	Analytes	0.5 ft		0.5 ft		0.5 ft		0.5 ft	2	
PESTICIDES	ALDRIN	0.001 U	0.0	0.001 U		0.001	n	0.001	n	
	ALPHA CHLORDANE	0.004 UJ	0.0	0.004 UJ		0.004	B	0.004		
	ALPHA-ENDOSULFAN	0.001 U	0.0	0.001 U	0		D	0.00	=	
	<b>BETA-BENZENEHEXACHLORIDE</b>	0.008 U	0.0	0.008 U	0		Þ	0.008	î D	
	BETA-ENDOSULFAN	0.001 U	0.0	0.001 U	0	0.001	D	0.001	ū	
	DELTA-BENZENEHEXACHLORIDE	0.009 U	0.0	0.009 U	0	0.000	n	0.00	n	
	DIELDRIN	0.002 U	0.0	0.002 U	0	0.002	. b	0.00	1	
	<b>ENDOSULFAN SULFATE</b>	0.001 UJ	0.0	0.001 UJ	0	_	n	0.00	) II	
	ENDRIN	0.007 U	0.0	0.007 U	0		. 5	0.007	: =	
	ENDRIN ALDEHYDE	0.001 U	0.001	01 U	Ó		ם ס	0.00	11	
	ENDRIN KETONE	0.001 UJ	0.001	U 100	0		B	0.00	111	
	GAMMA-CHLORDANE	0.004 UJ	0.00	04 U		_	: E	0.00		
	HEPTACHLOR	0.002 U	0.00	02 U	0		D	0.002	: =	
	HEPTACHLOREPOXIDE	0.001 U	0.001	U 10	0		ם	0.00	n	
	LINDANE	0.001 U	0.00	U 10	0		Ω	0.00	n	
	PPDDD	0.003 U	0.003	03 U	0		n	0.003	n	
	PPDDE	0.015	0.003	03 U	0.	0.000		0.003	n	
	PPDDT	0.016	0.004	04 U	0.	0.011		0.004	Ω	
SEMIVOLATILES	ALDRIN	NA	z	NA		Ϋ́N		Y	)	
	ALPHA CHLORDANE	NA	Z	NA		NA NA		. ×		
	ALPHA-ENDOSULFAN	ΝΑ	Z	NA	_	\ X		Ž		
	BETA-BENZENEHEXACHLORIDE	NA	Z	NA	~	Y X		Y X		
	BETA-ENDOSULFAN	NA	NA	<b>4</b>	~	Y X		Ž		
	BUTYLBENZYL PHTHALATE	٧×	NA	<	~	NA		ž		
	DELTA-BENZENEHEXACHLORIDE	٧×	NA	۷	_	ΝA		N N		
	DIELDRIN	٧×	NA	4	~	٧×		NA		
	ENDOSULFAN SULFATE	ΝA	NA	<	_	NA		N A		
	ENDRIN	ΥN	NA	<	~	٧×		×		
	ENDRIN KETONE	Ϋ́Υ	YN N	<	~	Ϋ́		\ Z		
	GAMMA CHLORDANE	NA	NA	<	_	×		Į Z		
	HEPTACHLOR	××	N	<	_	YZ		Y X		
	HEPTACHLOREPOXIDE	NA A	NA	<	2	VΥ		ž		
	LINDANE	٧×	Y'N	<b>4</b>	~	¥X		Y Z		
	PPDDD	NA	NA	<	. ~	Y N		Ž		
	PPDDE	NA	YN	•		¥		¥ Z		
	PPDDT	NA	X	•	. ~	. A		<b>Y X</b>		
				<u> </u>	•	5		CH		

Summary of Analytes Detected in Soil for the Wastewater Spreading Area (SWMU 35)

#### Subsurface Soil

		WSB-92-01	10-7	WSB	WSB-92-02	WSB-92-03	92-03	WSB-92-04	12-04	WSB-92-05	92-05	WSB-92-06	90-2
Group	Analytes	2 ft	u	4	4 ft	2 ft	=	3 12	ىي	2 17	يع	3 ft	
ANIONS	NITRATE	Ν		Ϋ́		5.07		3.99		3.36	=	3.36	
METALS	BARIUM	170		130		73		53		6	)	31	)
	CHROMIUM	18.6		14.2		13.3		9.32		7.94		6.82	
	COPPER	9.58		5.09		9.11		4.56		4.5		3.25	
	IRON	20000		13000		10000		7300		9089		2000	
	LEAD	15		9.5		19		6.6		00		7.5	
	SILVER	0.07		0.036		0.164		0.17		0.029		0.029	
	ZINC	46		38		46		17.9		16.8		11.6	
SEMIVOLATILES	ALDRIN	0.29	n	0.29	Ü.	0.29	Ω	0.29	n	0.29	n	0.29	ח
	ALPHA CHLORDANE	-	n	1	n		m		m	-	n	-	
	<b>DELTA-BENZENEHEXACHLORIDE</b>	0.29	Ω	0.29	Ω	0.29	Ω	0.29	Ω	0.29	Ω	0.29	=
	GAMMA CHLORDANE	ΥN		ΥN		2	n	S	m	د	n	<b>S</b>	i
	PPDDD	0.18	m	0.18	Б	0.18	Ω	0.18	n	0.18	: D	0.18	=
	PPDDE	0.22	m	0.22	m	0.22	n	0.22	n	0.22	Ω	0.22	· =
	PPDDT	0.41	Ω	0.41	Ω	0.41	n	0.41	Ω	0.41		0.41	=

Summary of Analytes Detected in Soil for the Wastewater Spreading Area (SWMU 35)

Subsurface Soil (continued)

Group	Analytes	WSB-92-07 2 ft	2-07	WSB-92-08 4 ft	2-08 L	WSB-92	WSB-92-09 6 ft	WSB-94-01	54-01 fr	WSP-94-02	14-02	WSP-94-03	1-03
												1 0	
ANIONS	NITRATE	7.05		5.84		3 36	=	N.		7.7		;	
METALS	RARIIIM	9				2	•	4		Y.		Y Z	
		730		22		<b>&amp;</b>		¥		٧X		X	
	CHROMIUM	17.3		16		==		ž		X		Y	
	COPPER	15		10.7		5.5		Z		. V			
	IRON	27000	-	200		13000				Z.		ZZ.	
		3	-	3		7,000		۷ Z		Ϋ́		٧X	
	LEAD	21		14		14		Ν		N V		NA N	
	SILVER	0.036	0	0.015	Ω	0.015	Þ	X		V N		1 1	
	ZINC	10		,		ţ				4 7 4			
SEMINOI ATH BE	AI DRIM	0	•			7.7		٧X		Ϋ́		٧Z	
SEIVILL OLIVILLES	ALUKIN	0.29			n	0.29	Ω	0.001	Ω	0.001	Ω	0.002	
	ALPHA CHLORDANE		5		m	_	m	0.004	1	000	=	900	
	<b>DELTA-BENZENEHEXACHLORIDE</b>	0.29	n		n	0.20		000	=		) <u>=</u>	3	
	GAMMA CHI ORDANE				. =	)	) <b>;</b>	700.0	> ;	6.00	>	0.01	
	The state of the s				3	^	3	0.00	Þ	0.004	Þ	0.067	
	FFUUD				Ω	0.18	Ω	0.003	Þ	0.003	n	0.003	=
	FFDDE		D D		n	0.22	n	0.003		0.008		0.003	=
	PPDDI				n	0.41	1	0.007		900		700	-

# Summary of Analytes Detected in Soil for the Wastewater Spreading Area (SWMU 35)

# Subsurface Soil (continued)

Analytes  ANIONS  NITRATE  METALS  BARIUM  CHROMIUM  COPPER  IRON  LEAD  SILVER  ZINC  ZINC  ALPHA CHLORDANE  DELTA-BENZENEHEXACHLORIDI  GAMMA CHI ORDANE	2	Ž	ż					20 1 7 1
CATILES /	₹ ₹ ₹ ₹ 2	Ž	11.7	311		3 ft	3 ft	
LATILES /	V V X		,	Ϋ́	Y.		NA	
	Y X	Ż	_	ΝΑ	AN AN		٧×	
	42	NA	_	NA	NA		NA	
		Ż	_	AN	YN N		NA	
	NA	ž	-	N A	NA		٧٧	
0.04410	VN	ž	_	Y.	NA		٧×	
	NA	ž	~	٧٧	NA		V.	
	NA	ž	_	٧×	YZ YZ		Ϋ́	
ALPHA CHLORDANE DELTA-BENZENEHEXACHLORIDI GAMMA CHI ORDANE	0.001	U 0.00	U 10	0.001	J 0.001	n	0.001 U	
DELTA-BENZENEHEXACHLORIDI GAMMA CHI ORDANF	90.0	0.0	J4 U	0.004	0.004	n	0.004 U	
GAMMA CHLORDANE	CORIDE	U 0.00	n 60	0.000	J 0.009	D	0.009 U	
	90.0	0.0	J4 U	0.004	J 0.004	ם	0.004 U	
PPDDD	0.003	U 0.00	)3 U	0.003	J 0.003	D	0.003 U	
PPDDE	0.005	0.0	=	0.003	J 0.003	D	0.003 U	
PPDDT	0.004	U 0.00	98	0.004	J 0.004	Ω	0.004 U	

All values are in µg/g (equal to ppm)

NA = Not analyzed

U = Not detected; value is the Certified Reporting Limit.

Dup = Duplicate analysis J = Value is estimated

Summary of Analytes Detected in Soil for the Old Burn Staging Area (SWMU 36)

#### Surface Soil

METALS ALUMINUM ARSENIC BARIUM BERYLLIUM CADMIUM CALCIUM COBALT COPPER IRON LEAD MAGNESIUM MAGNESIUM MAGNESIUM MANGANESE MERCURY NICKEL	ALUMINUM ARSENIC BARIUM BERYLLIUM CADMIUM CALCIUM CHROMIUM	NA 2			11.4.1	240	
· · · · · · · · · · · · · · · · · · ·	MINUM SNIC TUM MIUM MIUM MIUM MIUM MIUM MIUM	NA S				11 6.0	0.5 ft
ARSEI BARII BERY CADIV CALC CHRO COBA COBA IRON ILEAD MAGIN MERC NICKE	enic IUM KILIUM MIUM CIUM OMIUM		V.	M	į		
BARII BERY CADA CALC CHRO COBA COPPI IRON LEAD MAGN MAGN	KLLIUM MIUM SIUM OMIUM			NA	NA	NA	NA
BERY CADM CALC CHRO COBA COBA IRON ILEAD MAGN MAGN MERC NICKE	KILIUM MIUM SIUM SMIUM	O +7	74 O	24 U	72 U	24 11	11 1/2
BERY CADM CALC CHRO COBA COPA IRON IRON MAGN MAGN MARC NICKE	KLLIUM MIUM SIUM SMIUM	280	400	47	40		O +7
CADM CALC CHRO COBA COPPI IRON LEAD MAGN MAGN MERC NICKE	MIUM SIUM OMIUM	0.078 U	0 078 11	11 0200		170	110
CALC CHRO COBA COPPI IRON LEAD MAGN MANG MERC NICKE	DIUM	11 707 0	0 25	0.0/8	0.078 U	0.078 U	0.078
CHRO COBA COPPI IRON LEAD MAGN MANG MERC NICKE	MINM	0 +2+.0	0.474	0.424 U	0.424 U	0.424 11	0 424
COBA COBA COPPI IRON LEAD MANG MANG MERC	OMIOM	ď.	ΝA	۷X	Ϋ́	MA	
COBA COPPI IRON LEAD MAGN MANG MERC NICKE	F	7.73	8.55	3.0		V	Y.
COPPI IRON LEAD MAGN MANG MERC NICKE	17	NA			3.9	13.6	37.1
IRON LEAD MAGN MANG MERC NICKE	ER	100	YA!	AN	ΑΑ	Ϋ́	NA
LEAD MAGN MANG MERC NICKE		430	2,300	5.54	18.3		70,
LEAD MAGN MANG MANG MERC		15,000	13.000	000	000 01	14.3	10.5
MAGN MANG MERC NICKE		1 200	1 600	00×10	10,000	16,000	15,000
MANG MERC NICKE	NESTUM	2024	000,1	<b>8.3</b>	16	18	~
MERCI	ANECE	V.	Y.	NA	NA	AN	<b>*</b> * * * * * * * * * * * * * * * * * *
NICKE	CANASE	NA	NA	AN	NA.	***	VAI
NICKE	JURY	0.026 U	0.026		, , ,	¥.	V.
	EL		3 46	0.020	0.020	0.026 U	0.026 U
POTAS	POTASSIUM	, v	0 04.7		2.46 U	2.46 U	8.03
SILVER	æ	101	YY !	Y.	NA	NA	Y X
MINGOS	11.4	0.301	0.181	0.035	0.063	920 0	130 0
	July .	Y V	NA	NA	Ą	200	10.0
VANADIUM	MOIO	Ϋ́	NA A	Y	1 1	Y :	NA V
		370	370	1 6	YA i	Y V	ΥN
SEMIVOLATILES BUTYL	BUTYLBENZYL PHTHALATE				74	81	52
DI-N-BI	DI-N-BUTYI, PHTHAI ATE	0.33	0.09	0.33 UJ	0.054		0.022
			0.055	0.33 UJ	0.33	0 33 111	2000

Summary of Analytes Detected in Soil for the Old Burn Staging Area (SWMU 36)

Surface Soil (continued)

Croun		055-92-11	OSS-92-12	OSS-92-13	OSP-94-01A	OSP-94-02A	OSP-04-01A
dnoto	Analytes	0.5 ณ	0.5 ft	0.5 ft	0.5 ft	0.5 ft	0.5 ft
A TOTAL OF							
MEIALS	ALUMINUM	٧×	×	AN	11 650		;
	ARSENIC	11	27	1	0 /60	82/	4360
	BARITIM	5	O #7	74 O	3.8	3.27	4.13
		021	901	400	8.43	8 43 11	0 03
	BERYLLIUM	0.078 U	0.078	11 8200	11 101	0 100	20.0
	CADMIUM	11 707 0		0.070	0.47/	0.427 U	0.427 U
	CALCIIM		0.424	Z0 OZ	1.2 U	1.2 U	1.2
	Cincion	Y.	Y Y	٧×	65,000	63.000	40.800
	CHKOMIOM	12.6	16.2	22.2		000100	40,000
	COBALT		7.5	6.77	3.14	4.6	6.72
	Connen	Y.	Y V	NA	2.5 U	2.5	7 5 11
	COFFEE	18.6	12.3	150			
	IRON	15,000	15,000	24 000	: 400	5.01	17.9
	LEAD		00,01	04,000	1,120 U	6,110	9,100
	MAGNEGILIM	ī ;	<u>o</u> ;	1,900	7.44 U	. 20.9	17.7
	MANCANEGE	NA.	V	NA	6,780	6.450	6 280
	MAINCAINESE	VV	NA	NA	30.2 U	30.2	30.7
	MERCURY	0.027	0.026 U	0.026 U	0.05	11 500	2.00
	NICKEL	2.46 U	2.46 11		3.0		0.00
	POTASSIUM	Z	NA N	0.21		4.15	5.83
	SILVER	221	NA C	VA V	207 · U	207 U	207 U
	MIIIUS	0.122	0.062	1.7	0.803 U	0.803 U	0.803 11
	VANADIIN	Y :	NA V	V	92.2	116	171
	ANIALDIOM	Y Z	۷V	NA	2.23 U	2.23	7 23 11
SEMINOI ATHE	DITTUT DESCRIPTION DESCRIPTION OF THE PERSON	20	99	1500	15.4	45.2	108
CTURE	DIN DIESENCYL PHIHALATE		0.33 UJ	0.047	VN	Y X	0 Z
	DI-N-BULYL PHIHALATE	0.33 UJ		0.049	Y		111

Summary of Analytes Detected in Soil for the Old Burn Staging Area (SWMU 36)

Surface Soil (continued)

		OSP-94-04A	-04A	OSP-94-05A	OSP-94-06A	OSS-94-01	_	OSS-94-02	2	0.55-94-03
Group	Analytes	0.5 ft	اع	0.5 ft	0.5 ft	0.5 ft		0.5 ft		0.5 ft
METALS	ALUMINUM	857	Ω	14,800	14,300	80	1	288	=	23 300
	ARSENIC	4.63		5.57	5.1	4.04	)	5.19	•	6.51
	BARIUM	49.9		147	120	55.5		63.3		200
	BERYLLIUM	0.427	Ω	0.647	0.593	0.427	1	0.477	<u>_</u>	080 0
	CADMIUM	1.2	n	1.2 U	1.2 U	1.2	) D	1.2	) <b>=</b>	1.707
	CALCIUM	34,900		5,950	4,830	40,400	ı	51.900	)	
٠.	CHROMIUM	3.73		18.2	17.1	1.21	<b>-</b>	121	=	23.1
	COBALT	2.5	Ω	4.99	4.67	2.5	· D	2.5	· =	7.4
	COPPER	9.65		21.9	16.7	17.3		=	)	1. ct
	IRON	1,120	n	15,200	14,000		D	7.460		22 600
	LEAD	21.1		57.4	30.6			26.1		28.8
	MAGNESIUM	3,820		4,860	4,470	4,370		10.200		14.400
	MANGANESE	30.2	Ω	369	339	24.6	ם	172		482
	MERCURY	0.02	n	0.05 U	0.05 U	0.05	ם	0.05	Þ	0.05
	NICKEL	3.96		8.05	7.14	2.74	ם	4.39		14.4
	POTASSIUM	207	n	4040	3880	203	Ð	203	ם	6920
	SILVER	0.803	n	0.803 U	0.803 U	0.803	n	0.803	=	0.803
	SODIUM	229		328	292	70.2		94.9	<b>)</b>	
	VANADIUM	2.23	Ω	22.6 J	21.9 J	2.71	D	2.71	n	27.5
	ZINC	38.5		78.2	99	31.8		39.1		105
SEMIVOLATILES	BUTYLBENZYL PIITHALATE	Ϋ́		٧×	NA	NA VA		NA		Y Z
	DI.N.RITTVI DUTUAI ATE	***								

Summary of Analytes Detected in Soil for the Old Burn Staging Area (SWMU 36)

Surface Soil (continued)

Group	Analytes	OSS-94-04 0.5 ft	05S-94-05 0.5 R	1-05 t	OSS-94-06	OSS-94-07	OSS-94-08	80	6-SSO	OSS-94-09
						11 (2.5)	11 6.0		0.5 ft	=
METALS	ALUMINUM	801	11	;						
	ARGENIC	100		<b>-</b>	5,150	881 U	881	Þ	881	11
		7.32	4.41		4.91	4.59	0 21		-	
	BARDIM	198	t 07		01.3		17:/		3.17	
	BERYLLIUM	0.477	11	:	61.3	90.0	9.02	Þ	55.6	
	CADMITIM	0.427		<b>-</b>	0.427 U		0.427	n	0.427	=
	CALCHIN	1.59	1.2	D	1.2 U	1.2 U	1.2	=	-	•
	CALCIUM	44,100	42 000		60 000		1	>	7.1	)
	CHROMITIM	711	00,70	:	30,000	40,200	68,000		70,000	
	COBALT	0.11	1.21	D	9.2	8.03	1.21	=	121	
	COBALI	3.97	2.5	Ω	2.5 U	7 57		) :	17:1	<b>)</b>
	COPPER	19.4	17.7				6.7	>	5.5	
	IRON		14.7		07	27.4	13.1		4.95	
		70,100	6,970		0,870	14,000	11.800		6 810	
	LEAD	112	31.1		34.6	10.7	2001		0,010	
	MAGNESIUM	5 500	OLY V				7.07		8.91	
	MANGANESE	910	0/1:4	;	066,1	4,390	10,800		6,930	
	MEDCTIDA	710	24.6	D	171	155	196		246	=
	INCOM!	0.02	0.05	n	0.05 U	0.05	90.0	=	2 6	:
	MICKEL	5.63	4.14		6.85		6.	•	0.0	>
	POTASSIUM	203	1.		66.5	60.0	0.89		4.53	
	SILVER	607	507	<b>&gt;</b> :	0611	203 U	203	Ω	203	=
	KIDIK	0.803	0.803	n	0.803 U	0.803 U	0.803	n	0.803	=
	WANADIM	119	88.7		185	116	677		7 27	)
	VAINADIUM		U 2.71	=	11 11 0				0.50	
	ZINC			)	7.71	7.71		Þ	2.71	⊃
SEMIVOLATILES	BUTYLBENZYI, PHTHAI ATE	71.	5.20		771	84.1	61.9		26.9	
	DI-N-RITTYI PHTHAI ATE	V 1	¥ ;		۷ ۷	ΥN	٧×		YN V	
	alvaviii alvaa	NA	AN		NA	NA	Y.		V Z	

Summary of Analytes Detected in Soil for the Old Burn Staging Area (SWMU 36)

Surface Soil (continued)

		OSS-94-09	<u></u>	OSS-94-10	4-10	OSS-94-11	-11	OSS-94-12	-12	OSS-94-13	_	DSS-94-14	4-14
Group	Analytes	0.5 ft (dup)	(dn)	0.5 ft	اع	0.5 ft	ابد	0.5 ft	سر	0.5 ft		0.5 ft	2
METALS	ALUMINUM	881	Ω	881	n	5530		881	1	7 350		17 500	
	ARSENIC	3.15		4.65		4.7		4.86	)	4.41		4 78	
	BARIUM	63.7		9.05	Ω	63.7		262		85.9		138	
	BERYLLIUM	0.427	Ω	0.427	n	0.427	Ω	0.427	=		11	25	
	CADMIUM	1.2	n	1.2	n	1.2	n	1.2	) <b>=</b>		- <b>-</b>	ţ.,	F
	CALCIUM	64,000		59,000		38.600		70.00	)		2	1.6	)
	CHROMIUM	1.21	Ω	1.21	Ω	8.39		6.77		8 57		15.7	
	COBALT	2.5	n	2.5	ח	2.5	Ω	2.5	=	26.0		13.7	
	COPPER	5.12		5.93		9.71		139	)	13.2		75.2	
	IRON	6,500		1,260	n	9,490		10.700		11.900		15.400	
	LEAD	12.6		7.44	Ω	11.6		1400		29.7		418	
	MAGNESIUM	6,810		6,470		6,080		6.380		6.760		4 770	
	MANGANESE	592		24.6	n	166		170		230		377	
	MERCURY	0.05	Ω	0.05	D	0.02	Ω	0.05	Ω		Ω	0.05	Ξ
	NICKEL	6.53		4.51		5.88		5.84				8.56	)
	POTASSIUM	203	Ω	203	Ω	1400		203	n	1960		3410	
	SILVER	0.803	Ω	0.803	D	0.803	Ω	0.803	=		=	0 803	1
	SODIUM	47.8		61.3	٠	133		89.3	)			173	>
	VANADIUM	2.71	D	2.71	Ω	2.71	n	2.71	Ω	13.6		5 6	
	ZINC	26.2		20.4		44		172		63.2		76.1	
SEMIVOLATILES	BUTYLBENZYL PHTHALATE	Y V		NA		NA		٧X		٧X		ΥN	
	DI-N-BUTVI, PHTHALATE	Z		Ž		ATA							

Summary of Analytes Detected in Soil for the Old Burn Staging Area (SWMU 36)

Group	Analytes ALUMINUM ARSENIC BARIUM CADMIUM CADMIUM CALCIUM CALCIUM COBALT COPPER IRON LEAD	0.5 ft 13,300 4.78 113 0.57 1.2 U 3,840 15.7 4.48 13.4 15.200	0.Sft 11,700 4.53 116 0.58 1.2 U 4,370 16.2 4.98 14.7 15,600 25.1
SEMIVOLATILES	MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM VANADIUM ZINC BUTYLBENZYL PHTHALATE DI-N-RITYL PHTHALATE	4,580 358 0.05 U 8.64 3,540 0.803 U 164 19.6 52.4 NA	4,660 362 0.054 9.18 3,140 0.803 U 130 17.5 57.6 NA

Summary of Analytes Detected in Soil for the Old Burn Staging Area (SWMU 36)

#### Subsurface Soil

		OSP-94-01B	-01B	OSP-94-01C	-01C	OSP-94-02R	L02R	200 700 450	200	70 000	400	6	
Group	Analytes	3 ft		5 ft	}	3 ft	1	5 ft	7	1 6	929	OSP-94-03C	၁၉-
										110		11 6	
METALS	ALUMINUM	857	=	720	=	200	:	į	;				
	ABCENTO		•	6	>	00/	>	/C8	<b>-</b>	857	Þ	857	Þ
	ANSEMIC	3.56		2.5	Þ	3.09		3.54		3 86		4 22	,
	BARIUM	8.43	n	8.43	=	8 41	=	0 43		9 4	:	4.33	
	BERYLLIIM	0.437	=	100	· ;	Cr.o	> ;	0.43	>	8.43	_	8.43	Þ
		0.42/	>	0.427	)	0.427	D	0.427	n	0.427	n	0.427	=
	CADMIUM	1.2	ם	1.2	Þ	1.2	n	1.2	=	1 2	-		) <b>;</b>
	CALCIUM	45,000		35 700		63 000			)	7:1	>	7.7	>
	CHROMITIM			2016		30,00		00,00		45,700		37,200	
	CITICOMICINI	3.63		2.55		3.78		2.99		3 14		2 53	
	COBALT	2.5	n	2.5	=	2 6	=		:		;	4.36	
	COPPED		;	} ;	<b>)</b>	<b>7.7</b>	>	<b>C.7</b>	>	2.5	D	2.5	Þ
	TO THE	7.84	>	2.84	Þ	2.84	n	2.84	Ω	2.84	n	2.84	-
	IRON	1,120	n	1,120	n	1,120	n	1.120	=	1 120	- =	120	) <b>:</b>
	LEAD	7.44	n	7.44	=	7 44	=	7 44	· =		· :	1,120	<b>o</b> .
	MAGNESHIM	3 640			)		>	<b>*</b> **./	<b>-</b>	7.44	<b>-</b>	7.44	Þ
	MANGANEGE	3,040	;	7,800		3,870		3,710		4,090		3.100	
	MANGAINESE	30.2	D	30.2	n	30.2	n	30.2	Ω	30.2		30.7	=
	MERCURY	0.05	D	0.02	n	0.05	n	0.05	=	500	· =	200	) <b>:</b>
	NICKEL	4.22		3.39		4 43		177	)		>	5 6	>
	POTASSIUM	207	11	207	11	, ,	:	7.75	;	3.03		3.52	
	SII VEP	600	· ;	107	<b>)</b>	707	<b>)</b>	207	D	202	Þ	207	n
	NO THE COLUMN TO	0.803	)	0.803	n	0.803	D	0.803	Ω	0.803	Ω	0.803	Ξ
	SODIOM	127		8.69		157		64.5		167		06.3	)
	VANADIUM	2.23	Ω	2.23	Ω	2.23	11	2 23	11		:	70.7	;
					1			67.7	>	7.73	=	F.C. C	=

Summary of Analytes Detected in Soil for the Old Burn Staging Area (SWMU 36)

Subsurface Soil (continued)

		OSP-94-04B	14B	OSP-94-04C	04C	OSP-94-04C	.04C	OSP-94-05B	0513	OSP-94-05C	050	OSP-94-06B	1-06R
Group	Analytes	3 ft		5 ft		5 ft (dup)	(dn	3 ft		5 ft		3 ft	
METALS	ALUMINUM	857	Ω	857	ם	857	Þ	6.820		1,220	=	1 220	=
	ARSENIC	3.9		3.72		3.97		4.28		2.95	)	3.89	
	BARIUM	8.43	Ω	8.43	Ω	8.43	Ω	64.2		10.7	Ω	56.9	
	BERYLLIUM	0.427	Ω	0.427	Ω	0.427	n	0.427	Ω	0.427	n	0.427	n
	CADMIUM	1.2	Ω	1.2	Ω	1.2	Ω	1.2	Ω	1.2	n	1.2	o ח
	CALCIUM	43,800		63,000		44,500		13,700		29.200	)	15.000	)
	CHROMIUM	2.94		4.23		3.66		9.3		1.69	=	8.45	
	COBALT	2.5	Ω	2.5	n	2.5	n	3.32		2.5	o ב	3.26	
	COPPER	2.84	Ω	2.84	Ω	2.84	Ω	6.39		3.21	•	7.21	
	IRON	1,120	Ω	1,120	n.	1,120	Ω	9,300		1,730	n	9.540	
	LEAD	7.44	n	7.44	Ω	7.44	Ω	7.44	Ω	7.44	Ω	7.44	ם
	MAGNESIUM	3,910		4,310		3,750		2,450		3,620		2,280	
	MANGANESE	30.2	n	30.2	n	30.7	Ω	168		28.5	n	28.5	n
	MERCURY	0.091		0.05	Ω	0.05	Ω	0.02	Ω	0.05	Ω	0.05	Ω
	NICKEL	3.47		4.1		3.69		5.58		3.17		5.43	,
	POTASSIUM	207	Ω	207	ם	207	Ω	1,330		235	D	235	Ω
	SILVER	0.803	Ω	0.803	Ω	0.803	n	0.803	Ω	0.803	n	0.803	n
	SODIUM	236		195		125		207		227		155	,
	VANADIUM	2.23	U	2.23	Ω	2.23	Ω	3.74	ſ	3.74	m	3.74	IJ

Summary of Analytes Detected in Soil for the Old Burn Staging Area (SWMU 36)

		OSP-94-06C	290	
Group	Analytes	Sft		
METALS	ALUMINUM	1 220		
	ARSENIC	3.56	•	
	BARIUM	10.7	n	
	BERYLLIUM	0.427	n	
	CADMIUM	1.2	. n	
	CALCIUM	42,800		
	CHROMIUM	11.7		
	COBALT	2.62	-	
	COPPER	2.84	Ω	
	IRON	1,730	Ω	
	LEAD	7.44	n	
	MAGNESIUM	3,760		
	MANGANESE	28.5	n	
	MERCURY	0.05	D	
	NICKEL	3.93		
	POTASSIUM	235	D	
	SILVER	0.803	D	
	SODIUM	174		
	VANADIUM	3.74	W	
All values are in µg/g (equal to ppm)	(equal to ppm)			

NA = Not analyzed

U = Not detected; value is the Certified Reporting Limit.

Dup = Duplicate analysis

J = Value is estimated

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

#### Surface Soil

43         11.2         5.12         7.04           U         3.16         U         0.32         U         0.352         U         0.352         U         0.344         U         0.744         U         0.744         U         0.744         U         0.745         U			ARS-92-101	101	ARS-92-201		ARS-92-301	_	ARS-92-401	10	ARS-92-R01	301	APC-02-R02	E0.2
NITRATE  NITRATE  NITRATE  1.4.5-TRINITROBENZENE  2.4-DINITROTOLUENE  2.4-DINITROTOLUE	Group	Analytes	10		ນ 0		O ft		0 ft	<b>5</b> .	10 ft		IJ O	700
NITECHED   1.15   1.1	ANIONS	NITRATE	\$ 0.5		7		-		61.3		t			:
1.35-TRINITRODENZENE   0.371		NITETIE	20.0	1		:	71.7	;	21.6	:	7.04	;	3.36	)
1-10-TIMITROTOLIURIE         0.332         U         0.334         U         0.344	EVBI OCIVES	1 2 6 TDINITEODENIZENIE	5.10	<b>&gt;</b> :	3.10	o :	3.10	<b>)</b>	3.16	<b>&gt;</b>	3.16	Þ	3.16	)
2.45-TRINITROTOLIGNE         0.734         U         0.735         U         0.83         U         0.83         U         0.83         U         0.83         U         0.83         U         0.93         U         0.83         U         0.83<	EAFLUSIVES	1,5,5-1 KINII KUBENZENE	0.352	<b>&gt;</b>	0.352	<b>-</b>	0.352	Ω	0.352	Þ	0.352	n	0.352	n
2.4-CHMINTROTOLUENE         0.931         U         0.83         U         0.445         U		2,4-DINITROTOLUENE	0.744	n	0.744	b	0.744	n	1.41		0.744	n	0.744	n
2.6-DINITROTOLUENE         0.83         U         0.84         U         0.44         U         1.04         <		2,4,6-TRINITROTOLUENE	0.931	ם	0.931	ם	0.931	n	0.931	n	0.931	Þ	0.931	Ω
HMX		2,6-DINITROTOLUENE	0.83	D	0.83	<b>5</b>	0.83	n	0.83	Þ	0.83	n	0.83	n
NITROGUANIDINE		HMX	0.755	n	3.82		_	Ω	9		-	Ω	_	
RDX         TOTAL         0.445         U         145         0.445         U         44         0.445         U         0.045         U         0.048         U         0.048<		NITROGUANIDINE	ΥN		ΥN		N		ž		X		X	,
TETRYL         1.04         U         2.4		RDX	0.445	n	1.45		0.445	Ω	44		0.445	D	0.445	=
ALUMINUM         NA         ARESINC		TETRYL	1.04	ם	1.04	n	1.04	n	1.04	ם	1.04	o D	1.04	) <b>=</b>
ARSENIC         240         U         240         U <t< td=""><td>METALS</td><td>ALUMINUM</td><td>Y V V</td><td></td><td>Ϋ́</td><td></td><td>Ν</td><td></td><td>YN</td><td></td><td>×z</td><td></td><td>Ž</td><td></td></t<>	METALS	ALUMINUM	Y V V		Ϋ́		Ν		YN		×z		Ž	
BARIUM         43         110         82         76         85         150           GABRIUM         0.078         UJ         0.078         UJ </td <td></td> <td>ARSENIC</td> <td>240</td> <td>D</td> <td>240</td> <td>n</td> <td>74</td> <td>n</td> <td>240</td> <td>D</td> <td>. 24</td> <td>Ω</td> <td>24</td> <td>Ξ</td>		ARSENIC	240	D	240	n	74	n	240	D	. 24	Ω	24	Ξ
BERYLLIUM         0.078         UJ         0.044		BARIUM	43		110		83		92		85		130	)
CADMIUM         0.424         UJ         0.44         UJ         0.44         UJ         0.424         UJ         0.44         UJ         0.44 <td></td> <td>BERYLLIUM</td> <td>0.078</td> <td>Π</td> <td>_</td> <td>H</td> <td>0.078</td> <td>n</td> <td>0.078</td> <td>m</td> <td>0.078</td> <td>n</td> <td>0.078</td> <td>111</td>		BERYLLIUM	0.078	Π	_	H	0.078	n	0.078	m	0.078	n	0.078	111
CALCIUM         NA         NA <t< td=""><td></td><td>CADMIUM</td><td>0.424</td><td>n</td><td></td><td>Ιſ</td><td>0.424</td><td>n</td><td>1.42</td><td>_</td><td>0.424</td><td>35</td><td>4.6</td><td>; :</td></t<>		CADMIUM	0.424	n		Ιſ	0.424	n	1.42	_	0.424	35	4.6	; :
CHROMIUM         8.16         10.4         9.44         14.4         9.69         12.4           COBALT         NA         NA         NA         NA         NA         NA           COBALT         NA         NA         NA         NA         NA         NA           COBALT         S.65         J         24         J         50         J         R2         J         D		CALCIUM	YN Y		ΥN		NA		NA		Y'N		¥Z	,
COBALT         NA         NA <th< td=""><td></td><td>CHROMIUM</td><td>8.16</td><td></td><td>10.4</td><td></td><td>9.44</td><td></td><td>14.4</td><td></td><td>69.6</td><td></td><td>12.4</td><td></td></th<>		CHROMIUM	8.16		10.4		9.44		14.4		69.6		12.4	
COPPER         5.65         J         24         J         50         J         82         J         10         J         160           IRON         1500         11,000         11,000         11,000         10,000         12,000           LEAD         17         11         130         19         110         1         1300           MAGNESIUM         NA         NA         NA         NA         NA         NA         NA           MARCURY         0.026         U         0.0         U         0         U		COBALT	Y V		VV		Ν		N		٧Z		N.	
IRON         5500         13000         11,000         11,000         10,000         12,000           LEAD         17         11         130         19         110         130           MAGNESIUM         NA         NA         NA         NA         NA         NA           MARDGANESE         NA         NA<		COPPER	5.65	_	24	_	20	_	82	_	10		160	-
LEAD         LEAD         17         11         130         19         110         1300           MAGNESIUM         NA         NA         NA         NA         NA         NA           MAGNESIUM         NA         NA         NA         NA         NA           MARCURY         0.026         U         0.0         U         0         U         0         U         0         U         0         U         0         U         0         U         0         U         0         U         0         U         0         U         0         U         0         U         0         U         0         U         0         U         0         U         U         0         U         U         0         U         U         0         U		IRON	5500		13000		11,000		11,000		10,000		12,000	
MAGNESIUM         NA         NA         NA         NA         NA         NA         NA           MANGANESE         NA         NA         NA         NA         NA         NA         NA           MANGANESE         NA         NA         NA         NA         NA         NA         NA           MERCURY         0.026         U         0.02         U         0         U		LEAD	17		11		130		19		110		1300	
MANGANESE         NA		MAGNESIUM	٧X		٧X		Ϋ́		Ν		NA		N	
MERCURY         0.026         U         0.026         U         0.0         U         0		MANGANESE	Ϋ́		Ϋ́		Ϋ́		Ϋ́		٧X		Ϋ́N	
NICKEL         2.46         U         D         D         D         D		MERCURY	0.026	n		Ð	0	Ď	0	Ω	0	n	0	n
POTASSIUM         NA		NICKEL	2.46	n		5	2.46	Ω	2.46	Ω	2.46	n	2.46	Ω
SILVER         0.082         0.066         0.93         0.55         0.074         0.121           SODIUM         NA         NA         NA         NA         NA         NA         NA           VANADIUM         NA         NA         NA         NA         NA         NA         NA           ZINC         19.7         150         150         170         30         180           2,4-DINITROTOLUENE         0.39         U         0.39         U         0.39         U         0.39         U         0.39           2,6-DINITROTOLUENE         0.53         U         0.53         U         0.53         U         0.39         U         0.39         U         0.39         U         0.39         U         0.39         U         0.39         U         0.53         U         0.53 <td></td> <td>POTASSIUM</td> <td>Y V</td> <td></td> <td>Ϋ́</td> <td></td> <td>٧</td> <td></td> <td>Ϋ́</td> <td></td> <td>ΥN</td> <td></td> <td>NA</td> <td></td>		POTASSIUM	Y V		Ϋ́		٧		Ϋ́		ΥN		NA	
SODIUM         NA         NA <th< td=""><td></td><td>SILVER</td><td>0.082</td><td></td><td>990.0</td><td></td><td>0.93</td><td></td><td>0.55</td><td></td><td>0.074</td><td></td><td>0.121</td><td></td></th<>		SILVER	0.082		990.0		0.93		0.55		0.074		0.121	
VANADIUM         NA         180         <		SODIUM	VN		ΝA		Ν		٧X		ΥN		Y V	
ZINC         19.7         150         150         170         30         180           2,4-DINITROTOLUENE         0.39         U         0.39         U         0.39         U         0.39         U         0.39           2,6-DINITROTOLUENE         0.53         U         0.53         U         0.53         U         0.53         U         0.53         U         0.53           DIETHYL PHTHALATE         0.33         UJ		VANADIUM	٧X		۷V		Ν		٧X		٧٧		٧X	
2,4-DINITROTOLUENE         0.39         U         0.53         U         0.33         <		ZINC	19.7		150		120		170		30		180	
0.53 U 0.53 U 0.53 U 0.53 U 0.53 U 0.53 U 0.53 U 0.53 U 0.53 U 0.53 U 0.33 UJ	SEMIVOLATILES	2,4-DINITROTOLUENE	0.39	n		b	0.39	Ω	0.39	Ω	0.39	n	0.39	n
0.33 UJ 0.33 UJ 0.939 0.33 UJ 0.33 UJ 0.33 0.33 UJ 0.33 UJ 0.33 UJ 0.33 UJ 0.33 UJ 0.33 3 0.33 UJ 0.33 UJ 0.33 UJ 0.33 UJ 0.33		2,6-DINITROTOLUENE	0.53	n		5	0.53	n	0.53	Ω	0.53	Ω	0.53	ח
0.33 UJ 0.33 U		DIETHYL PHTHALATE	0.33	n		ц	0.939		0.33	5	0.33	m	0.33	n
0.33 UJ 0.33 UJ 0.33 UJ 0.167 0.33 UJ 0.33		DIMETHYL PHTHALATE	0.33	5		JJ.	0.33	m	0.33	E)	0.33	m	0.33	5
		DI-N-BUTYL PHTHALATE	0.33	5		=	0.33	M	0.167		0.33	n	0.33	n

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Surface Soil (continued)

		ARS-92-B03	303	ARS-92-B04	304	ARS-92-R21	221	ARS-07-P11	114	A D C. 07 D C1	170	A DO DO OUA	1
Group	Analytes	10		0 ft		o fr		10 C		17 ( ) ( ) ( ) ( )		74-74-0 0.5 ft	۷ <u>۱</u>
ANIONS	ar v driv	,		i									
	NITOTE	4.5	:	5.74	;	3.36	Þ	3.36	n	3.36	n	NA	
EYD! OCIVES	1 2 6 TRINITAGENIZENIE	3.16	<b>)</b>	3.16	D	3.16	Þ	3.16	n	3.16	n	۲×	
EAT LOSI VES	1,3,3-1 KINIT KOBENZENE	0.352	<b>&gt;</b>	0.352	Þ	0.352	ח	0.352	n	0.352	Ω	0.922	=
	2,4-DINITROTOLUENE	0.744	Þ	0.744	n	0.744	n	0.744	n	0.744	=	2.5	=
	2,4,6-TRINITROTOLUENE	0.931	Þ	0.931	Ω	0.931	n	0.931	n	6.84	)	<u>,</u>	=
	2,6-DINITROTOLUENE	0.83	ב	0.83	ם	0.83	n	0.83	Ω	0.83	=	,	<b>=</b>
	HMX	0.755	n	0.755	n	-	Ω	-	I	-	) <b>=</b>	4 C	) =
	NITROGUANIDINE	۷ ۷		NA		Ϋ́N		N N		, X	)	٧ ٧	>
	RDX	0.445	n	0.445	1	0 445	Ξ	0.445	Ξ	200	=	Y 2	:
	TETRYL	1.04	n	1.04	n	1.04	n	10.5	<b>=</b>	1.04	<b>=</b>	7 11	<b>)</b>
METALS	ALUMINUM	Ϋ́		٧٧		Ϋ́		X	)	Z	)	10101	>
	ARSENIC	24	n	24	n	24	Ω	24	Ξ	24	=	0 03	
	BARIUM	11		84		100		28	)	6		20.7	
	BERYLLIUM	0.078	5	0.078	n	0.078	n	0.078	Ð	0.078	111	0.477	11
	CADMIUM	0.424	n	0.424	5	0.424	n	0.424	S	0.424	3 5	1.2	=
	CALCIUM	Ϋ́		٧z		٧X		YZ		Z	;	30600	)
	CHROMIUM	11.8		10.1		12		6.71		10.5		12.7	
	COBALT	Ν		Ϋ́		YN N		X		Y.		· ·	
	COPPER	13.3	_	12.2	ſ	13.2	_	7.11	-	13.8	-	9.71	
	IKON	11000		11000		13,000		7,200		12.000	,	10.400	
	LEAD	180		140		21		42		<u>&amp;</u>		20.6	
	MAGNESIOM	Ϋ́		۲×		Ν		٧Z		Y Z		6060	
	MANGANESE	YZ Z		NA		Ν		NA		Ž		229	
	MERCURY	0.026	n	0.026	Ω	0	n	0	n	0	n	C	11
	NICKEL	2.46	ם	2.46	n	2.46	Ω	2.46	n	2.46	n	5.71	)
	FUIASSIUM	YZ		Y Z		Ϋ́Ν		٧٧		٧X		2960	
	SILVEK	0.048		0.108		0.078		0.52		0.048		0.803	Ω
	SOLIOM	YZ :		V V		٧N		Ϋ́Z		Ϋ́Х		206	•
	VANADIUM	YZ ?		× Z		۷N		¥		٧×		17.7	
04 114 10/11/130	ZIINC	34		27		43		55		39		44.2	
SEMINOLATICES	2,4-DINITROTOLUENE	0.39	D	0.39	n	0.39	n	0.39	n	0.39	n	×	
	2,6-DINITROIOLUENE	0.53	Ω	0.53	Ω	0.53	n	0.53	n	0.53	D	×	
	DIETHYL PHIHALATE	0.33	5	0.33	n	0.33	Ω	0.33	m	0.33	m	ž	
	DIMETRYL PHIHALATE	0.33	5	0.33	n.	0.33	m	0.33	m	0.33	m	N N	
	DI-IN-BOILE FILLERLALE	0.33	3	0.33	B	0.33	fi	0.33	Б	0.33	Ð	NA	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Surface Soil (continued)

Group	Analytes	ARK-94-02A 0.5 ft	VZO	0.5 ft	ft ft	0.5 ft	0.5 ft	0.5 ft	F CO.	0.5 ft	0.5 ft	0.5 ft	۲ <u>۲</u>
ANIONS	NITRATE	Ϋ́		Ϋ́		Ϋ́		Y V		N		NA	
	NITRITE	۷V		NA		Y V		VV		Y <sub>N</sub>		NA	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	n	0.922	n	0.922	n	0.922	n	0.922	Ω	0.922	Ω
	2,4-DINITROTOLUENE	2.5	Ω	2.5	n	2.5	Ω	2.5	n	2.5	n	2.5	Þ
	2,4,6-TRINITROTOLUENE	7	Ω	7	n	7	Ω	7	n	7	Ω	2	ח
	2,6-DINITROTOLUENE	7	Ω	7	n	7	Ω	7	Ω	7	n	7	n
	HMX	7	Ω	7	Ω	7	Ω	7	n	7	n	7	n
٠	NITROGUANIDINE	ΥN		۲×		ΥN		NA		NA		×	
	RDX	1.28	n	1.28	Ω	1.28	Ω	1.28	Ω	1.28	Ω	1.28	ח
	TETRYL	2.11	Ω	2.11	Ω	2.11	n	2.11	Ω	2.11	D	2.11	)
METALS	ALUMINUM	15800		18100		12900		17100		13400		17100	
	ARSENIC	4.71		5.49		4.28		5.43		4.48		4.49	
	BARIUM	133		153		108		138		123		156	
	BERYLLIUM	0.607		0.73		0.52		0.623		0.542		0.659	
	CADMIUM		Ω	1.2	n	1.2	ח	1.2	n	1.2	Ω	1.2	ר
	CALCIUM	11900		10900		6820		8350		8400		13600	
	CHROMIUM	. 17.3		19		13.9		18.1		13.9		16.6	
	COBALT	4.38		6.22		3.73		5.26		3.74		4.95	
	COPPER	13.8		30.1		14.5		19.8		14.8		13	
	IRON	15700		18300		13000		16300		13900		16400	
	LEAD	9.55		33.6		12.2		21.3		13.8		8.31	
	MAGNESIUM	7890		7420		2620		6790		7370		9340	
	MANGANESE	397		441		310		382		412		484	
	MERCURY	0.05	n	0.05	n	0.05	Ω	0.02	n	0.05	Ω	0.05	n
	NICKEL	8.94		10.5		7.09		8.51		6.82		9.39	
	POTASSIUM	5240		5480		3960		5310		4580		2900	
	SILVER	0.803	n	0.803	Ω	0.803	Ω	0.803	Ω	0.803	n	0.803	D
	SODIUM	320		321		280		455		265		414	
	VANADIUM	25.8		27.4		20.4		29.2		20.5		56	
	ZINC	83.5		67.4		45.9		48.6		45.1		50.5	
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́		NA		Ν		Ϋ́N		Y N		Ϋ́	
	2,6-DINITROTOLUENE	Ϋ́		NA		Ν		٧N		Ϋ́Ν		NA	
	DIETHYL PHTHALATE	۷X		٧X		Ϋ́N		ΥN		Ϋ́Ν		VN.	
	DIMETHYL PHTHALATE	٧X		٧X		NA		Ϋ́		Š		NA	
	THE STATE OF THE ATTE	7.17		* * * *									

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Group         Analytes         0.5 ft           ANIONS         NITRATE         NA           INTRATE         NA         NA           EXPLOSIVES         1,3,5-TRINITROBENZENE         2,5 U           2,4-DINITROTOLUENE         2,5 U           1,4,6-TRINITROTOLUENE         2,7 U           HMX         2         0           HMX         2         0           HMX         NA         NA           RDX         1,28         0           NUTROGUANIDINE         NA         1,28           RDX         1,28         0           ARSENIC         2,013         18500           ARSENIC         5,03         18700           BARIUM         0,689         0,689           CALCIUM         1171         0           CALCIUM         184         0,689           CALCIUM         184         0,689           CALCIUM         184         0,669           CALCIUM         184         0,669           COPPER         1656         1656           IRON         112.5         499           MAGNESIUM         530         0           MAGNESIUM         6300			0.5 ft	ے	0.5 ft (dup)	(dnp)	0.6	0.5 ft	0.5 ft	=	0 5 6	<u>.</u>
VES       I,3,5-TRINITROBENZENE       NA         1,3,5-TRINITROTOLUENE       2.5         2,4-DINITROTOLUENE       2         2,6-DINITROTOLUENE       2         HMX       NA         RDX       1.28         TETRYL       2.11         ALUMINUM       18500         ARSENIC       5.03         BARRIUM       171         BERYLLIUM       1.2         CALCIUM       18.4         CALCTUM       18.4         COPPER       15.6         IRON       16700         LEAD       16700         MAGNESIUM       16700         MANGANESE       0.05         NICKEL       9         POTASSIUM       6300         SILVER       0.803         SODIUM       29.4							;			:	U.3.	,
VES         I,3,5-TRINITROBENZENE         0.922           2,4-DINITROTOLUENE         2.5           2,4,6-TRINITROTOLUENE         2           2,6-DINITROTOLUENE         2           HMX         NA           RDX         1.28           TETRYL         2.11           ALUMINUM         18500           ARSENIC         5.03           BARIUM         1.2           CALCIUM         1.2           CALCIUM         1.2           CALCIUM         1.2           COBALT         5.31           COPPER         16700           LEAD         16700           LEAD         12.5           MAGNESIUM         9760           MANGANESE         499           MANGANESE         499           MERCURY         0.05           NICKEL         9           POTASSIUM         6300           SULVER         519           VANADIUM         29.4			×z		Ž		Ž		Ą.		Ž	
VES       1,3,5-TRINITROBENZENE       0.922         2,4-DINITROTOLUENE       2.5         2,4,6-TRINITROTOLUENE       2         2,6-DINITROTOLUENE       2         HMX       NA         RDX       1.28         TETRYL       2.11         ALUMINUM       18500         ARSENIC       5.03         BARIUM       1.2         CADMIUM       1.2         CALCIUM       18.4         COBALT       5.31         COPPER       16700         LEAD       12.5         MAGNESIUM       9760         MANGANESE       499         MANGANESE       499         MANGANESE       6300         SILVER       0.083         SODIUM       29.4			Y Y		X		ž		Z Z		Z Z	
2,4-DINITROTOLUENE 2,4,6-TRINITROTOLUENE 2,6-DINITROTOLUENE 2 HMX RMX RDX RDX RDX RDX RETRYL ALUMINUM ARSENIC BARUM BERYLLIUM CADMIUM CADMIUM CADMIUM 1.2 CALCIUM CHROMIUM COPPER IRON LEAD MAGNESIUM MANGANESE MAGNESIUM MANGANESE NICKEL POTASSIUM SILVER SODIUM 29.4			0.922	Ω	0.922	Ω	0.922	Ω	0.922	Ω	0.922	ח
2,4,6-TRINITROTOLUENE 2,6-DINITROTOLUENE 2,6-DINITROTOLUENE 2,1 HMX RDX RDX RDX 1.28 TETRYL ALUMINUM ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC BERYLLIUM 11,1 12,1 12,0 12,5 MAGNESIUM MANGANESE MAGNESIUM MANGANESE MERCURY NICKEL POTASSIUM SILVER SODIUM 29,4			2.5	Ω	2.5	Ω	2.5	Ω	2.5	o ח	2.5	· 🗅
2,6-DINITROTOLUENE 2 HMX RDX RDX 1.28 TETRYL ALUMINUM ARSENIC ARSENIC BARIUM BERYLLIUM 1.2 CADMIUM 1.2 CALCTUM 18100 CHROMIUM 1.2 CALCTUM 18100 CHROMIUM 1.2 COPPER 18.4 COBALT COPPER 18.6 IRON LEAD MAGNESIUM MANGANESE MAGNESIUM MANGANESE NICKEL POTASSIUM 519 VANADIUM 29.4	2 2 NA 1.28 2.11		7	Ω	7	n	7	Ω	7	D	7	) D
HMX  RDX  RDX  1.28  TETRYL  ALUMINUM  ARSENIC  5.03  BARIUM  1.2  CADMIUM  1.2  CALCIUM  18.4  COBALT  COPPER  IRON  LEAD  MAGNESIUM  MAGNESIUM  MANGANESE  MAGNESIUM  MANGANESE  MAGNESIUM  SODIUM  29.4  VANADIUM  29.4	2 NA 1.28 2.11		7	n	7	n	7	n	7	Ω	7	ם
NITROGUANIDINE	NA 1.28 2.11		7	Ω	7	n	2	Ω	7	n	7	ם
RDX         TETRYL       2.11         ALUMINUM       18500         ARSENIC       5.03         BARIUM       0.689         CADMIUM       1.2         CALCIUM       18.4         COBALT       5.31         COPPER       16700         LEAD       12.5         MAGNESIUM       9760         MANGANESE       499         MANGANESE       9         POTASSIUM       6300         SILVER       0.083         VANADIUM       29.4	1.28		Ϋ́		NA		٧×		Y Y		NA	
TETRYL ALUMINUM ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC ARSENIC BARIUM BERYLLIUM CADMIUM CALCIUM CALCIUM IR4 COBALT COPPER IRON ILEAD ILEAD MAGNESIUM MANGANESE MAGNESIUM MANGANESE MAGNESIUM SILVER SODIUM 29.4 VANADIUM 29.4	2.11	Ω	1.28	Ω	1.28	Ω	1.28	Ω	1.28	n	1.28	
ALUMINUM ARSENIC 5.03 BARIUM BERYLLIUM CADMIUM 1.2 CALCIUM 18.4 COBALT COPPER IRON ILEAD MAGNESIUM MANGANESE MAGNESIUM MANGANESE NICKEL POTASSIUM SODIUM 29.4 VANADIUM 29.4		Ω	2.11	n	2.11	Ω	2.11	Ω	2.11	n	2.11	Þ
5.03 171 0.689 1.2 18100 18.4 5.31 15.6 16700 12.5 9760 499 . 0.05 9 6300 6300 0.803 12	18500		12800		13600		8940		11800		13100	
171 0.689 1.2 18100 18.4 5.31 15.6 16700 12.5 9760 499 . 0.05 1 9 6300 6300 6300 6300 9 6300 9 6300	5.03		3.59		4.56		3:38		4.87		9	
0.689 1.2 18100 18.4 5.31 15.6 16700 12.5 9760 499 . 0.05 1 9 6300 0.803 1 519	171		115		119		72		98.4		112	
1.2 18100 18.4 5.31 15.6 16700 12.5 9760 499 . 0.05 1 9 6300 6300 0.803 1	0.689	_	.507		0.52		0.427	Ω	0.477		0.54	
18100 18.4 5.31 15.6 16700 12.5 9760 499 . 0.05 9 6300 0.803 519	1.2	Ω	1.2	n	1.2	Ω	1.2	Ω	1.2	Ω	1.2	Ω
18.4 5.31 15.6 16700 12.5 9760 499 0.05 9 6300 0.803 519	18100		6540		8310		6030		4690		10600	
5.31 15.6 16700 12.5 9760 499 0.05 9 6300 0.803 519 519	18.4		13.9		14.7		11.3		13.4		14.2	
15.6 16700 12.5 9760 499 0.05 9 6300 0.803 519 519	5.31		3.88		4.07		3.2		3.19		3.32	
16700 12.5 9760 499 . 0.05 9 6300 0.803 519 519	15.6		23.8		22.4		11.8		10.2		17.8	٠
12.5 9760 499 0.05 9 6300 0.803 519 519	16700	_	3100		14000		12500		13100		14900	
9760 499 0.05 9 6300 0.803 519 29.4	12.5		23.2		19.9		9.42		9.76		16.2	
499 0.05 9 6300 0.803 519 59.4	9760		5310		2660		3440		2080		6040	
XY 0.05  UM 6300 0.803 UM 29.4	499		343		347		200		285		317	
9 UM 6300 0.803 UM 29.4	0.05	Ω	0.05	n	0.05	Ω	0.05	Ω	0.05	n	0.02	D
.UM 6300 0.803 519 UM 29.4	6		6.51		7.71		6.25		7.79		9.51	
0.803 519 UM 29.4	6300		4050		4140		2430		3420		4270	
UM	0.803	n	.803	n	0.803	n	0.803	Ω	0.803	Ω	0.803	n
	519		350		407		212		211		233	
	29.4		20.4		22.8		17.4		19.8		22.1	
ZINC	52.2		51.5		48.3		29.4		35.5		42.5	
	Ϋ́N		Ϋ́		NA		×z		Ϋ́N		Ϋ́	
	NA		Ϋ́		NA		NA		Ν		٧N	
			۲×		ΥN		٧X		Ϋ́		ΑN	
			٧X		NA		Y Z		۲ Z		Š	
DI-N-BUTYL PHTHALATE NA			NA		NA		٧×		NA		Y X	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Group	Analytes	ARP-94-13A 0.5 ft	4-13A ft	ARP-94-14A 0.5 ft	Ą	ARP-94-15A 0.5 ft		ARP-94-16A 0.5 ft	<b>V</b> 9	ARP-94-17A 0.5 ft	<b>4</b> /	ARP-94-18A 0.5 ft	18A
ANIONS	NITRATE	NA		NA		NA		Š		Ϋ́		Y.	
	NITRITE	٧X		Ϋ́Х		¥Z		Y Z		Z Z		<b>X</b>	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	Ω	0.922 U		0.922 U	0	_	=	0.922	11	0 922	111
	2,4-DINITROTOLUENE	2.5	Ω	2.5 U		2.5 U	•			2.5	: <u>-</u>	77.0	3 =
	2,4,6-TRINITROTOLUENE	2	n	2 U		2 U		2 U		2	. =	}	=
	2,6-DINITROTOLUENE	2	n	2 U		2 U					· <del>-</del>	، د	=
	HMX	2	Ω	2 U		2 11				, ,	· =	۱ د	) <b>:</b>
	NITROGUANIDINE	YN		VN		V		×		Y Z	3	V Z	>
	RDX	1.28	Ω	1.28 U		1.28 U		28	-	1 28	-	1 28	Ξ
	TETRYL	2.11	n	2.11 U		2.11 U	7	2.11 U		2.11	. =	2.11	=
METALS	ALUMINUM	17500		8380		5530	2	0060		18200	,	17300	
	ARSENIC	14.3		7.22	•	5.64	S	.03		5.08		5.57	
	BARIUM	176		80.9		63.8	_	801		150		134	
	BERYLLIUM	0.848		0.427 U		0.427 U	Ö	485		0.632		0.655	
	CADMIUM	1.2	Ω	1.2 U		1.2 U		1.2 U	-		D	1.2	
	CALCIUM	76000		27400	• •	21100	2	000				12600	)
	CHROMIUM	18.2		15.5		7.72		12		18.8		17.9	
	COBALT	8.78		m		2.5 U	,	3.4		4.55		5.44	
	COPPER	40.8		7.54		6.47		10		11.9		12.6	
	IRON	23200		11200		7980		9400		16000		17100	
	LEAD	48.4		18		9.19		2.7		11.5		10.9	
	MAGNESIUM	10200		4580		2870	9	990		8790		8460	
	MANGANESE	344		149		21.9 U	~,	01		397		392	
	MERCURY	0.096		0.05 U		0.058	0	.05 U	_		D	0.05	n
	NICKEL	17.7		7.78		5.01	7	.84		9.14		=	
	FULASSIUM	4130	;			1430	er.	260		5970		2690	
	SILVER	0.803	Þ	0.803 U	_	0.803 U	0	803 U	_		Ω	0.803	ח
•	SODIUM	202		229		192	7	9		513		359	
	VANADIUM	53		18.7		2.51 U		8.7		27.3		25.5	
	ZINC	63.7		29.4		17.5		8.3		45.3		50.1	
SEMIVOLATILES	2,4-DINITROTOLUENE	Y Z		ΥN		٧V		٧×		Ν		Ϋ́N	
	2,6-DINITROTOLUENE	۷ ۷		VΑ		٧Z		Y.		NA		X	
	DIETHYL PHTHALATE	٧X		٧X		٧٧	_	<b>&gt;</b>		NA		×	
	DIMETHYL PHTHALATE	ΥN		۷X		NA	_	٧×		NA		ž	
	DI-N-RITTY! PHTHAI ATE	Ϋ́Z		Y.X		MIA		* * *		•			

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Surface Soil (continued)

Group	Analytes	ARP-94-19A 0.5 ft	-19A	ARP-94-20A	4-20A	ARP-94-2	ARP-94-21A	ARP-9	ARP-94-22A	ARP-	ARP-94-23A	ARP-94-24A	-24V
						2	=	0	=	0	0.5 It	0.5 ft	2
ANIONS	NITRATE	Y'A		٧X		X		Ž		Ž		2	
	NITRITE	ΥN		٧		Y		Ž		Č.		<u> </u>	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922		0.922	m	0.922	Ш	0 00	110	V 20 0		AN C	:
	2,4-DINITROTOLUENE	2.5		2.5	=	2.5	; =	2 5	á E	77.0		0.922	Ä:
	2,4,6-TRINITROTOLUENE	7	Ω	2	=	; ~	=	<u>;</u> (	4 E	C:7		7.5 J	¥ :
	2,6-DINITROTOLUENE	,		, ,	) <b>=</b>	۹ د	) <b>:</b>	4 (	ž:	7		7	UR
	HMX	4 6		4 6	> ;	7	<b>)</b>	7	UR	7		7	JR
	MITBOCHIANIE	7		7	<b>-</b>	7	n	7	UR	7		7	IIR I
	MITROGUANIDINE	AN		Ν		Ϋ́		Ν		X		Z	5
	KDX	1.28	) D	1.28	n	1.28	Ω	1.28	UR	1 28	118	1 28	110
7.7.1.1.7	IETRYL	2.11	Ω	2.11	n	2.11	Ω	2.11	I.R	2 -1		7 11	<u> </u>
MEIALS	ALUMINUM	6430		9760		15400		12400	;	9160		7100	400
	ARSENIC	5.92		4.05		9.41		5.44				231	
	BARIUM	81.9		93		124		110		<u> </u>			
	BERYLLIUM	0.427		0.427	1	0 564		0 608		2012		2.67	:
	CADMIUM	1.2	Ω	1.2	<b>=</b>	120	=	1,000	-	0.510		0.42/	o :
	CALCIUM	33100	•	8400	)	16600	•	75300	>	7:1		7.1	<b>-</b>
	CHROMIUM	9.47		11.7		1,000		3000		20011		1000	
	COBALT	2 08		2.7				7.01		11.9		89.6	
	COPPER	6.70				4.48		5.15		3.15		3.53	
	TON	9.70		7.17		16.1		14.4		25.9		9.3	
	IKUN	10200	_	2000		16600		15700		14900		10500	
	LEAU	7.44	D.	9.25		17.2		11.4		34.4		7 44	Ξ
	MAGNESIUM	2760		5070		6640		6950		5620		3620	)
	MANGANESE	130		223		326		291		320		107	
	MEKCUKY	0.02	n	0.05	Ω	0.05	Ω	0.02	Ω	0.05		0.05	Ξ
	NICKEL	6.27		89.9		80.6		9.63	_	9.46	) <b>–</b>	69.9	) <b>-</b> -
	FOTASSIUM	1760	•	3410		4990		4370		3070	•	2120	,
	SILVER	0.803	D D	.803	Ω	0.803	Ω	0.803	n	0.803	Ω	0.803	Ξ
	SODIOM	103		582		310		201		119	ı	108	)
	VANADIUM	15.8		18.5		25		70		16.9		14.6	
2	ZINC	25.4	•	31.2		51		47.5		60.4		28.3	
SEMIVOLATILES	2,4-DINITROTOLUENE	ΥN		٧X		٧X		×		N N		NA N	
	2,6-DINITROTOLUENE	×		٧×		٧N		V V		Ž		1 ×	
	DIETHYL PHTHALATE	Ϋ́		٧V		NA		×		Z		. Y	
	DIMETHYL PHIHALATE	V N		Y.		Ϋ́		٧		Z		Ž	
	DI-N-BUTYL PHTHALATE	NA		NA		Ϋ́N		NA		Z		: ×	
										4 76 7		5	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

200		ARP-5	ARP-94-25A	ARP-9	ARP-94-26A	ARP-9	ARP-94-27A	ARP-9	ARP-94-28A	ARP-94-29A	4-29A	ARP-94-29A	-29A
Oronp	Analytes	0.5	0.5 ft	0.5 ft	ے	0.5 ft	2	0.5 ft	2	0.5 ft	T.	0.5 ft (dup)	(dnf
ANIONS	NITRATE	VX VX		Ž		X		Ž		Ž		7	
	NITRITE	NA		Y		Y N		Š		<b>X</b> X		¥ ;	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	UR	0.922	Ω	0.922	=	0 922	=	0 03	=	V Z	=
	2,4-DINITROTOLUENE	2.5	UR	2.5	n	2.5	ם מ	2.5	=	25.0	<b>=</b>	776.0	<b>&gt;</b> =
	2,4,6-TRINITROTOLUENE	7	UR	7	n	7	· <b>D</b>	2	) <b>=</b>	}	<b>=</b>	<u></u> , c	> =
	2,6-DINITROTOLUENE	2	UR	7	Ω	7	=	, ,	· =	; c	) <b>=</b>	٦ ,	) <b>:</b>
	HMX	7	UR	7	=	٦ (	· =	. د	<b>=</b>	٦ ,	<b>&gt;</b> =	<b>v</b> c	<b>)</b>
	NITROGUANIDINE	YN V		YZ	•	ž	)	Ϋ́	>	7 Z	<b>-</b>	7 X	>
	RDX	1.28	UR	1.28	n	1.28	Ω	1.28	11	1 28	11	2 2	-
	TETRYL	2.11	UR	2.11	Ω	2.11	n	2.11	) <b>=</b>	2 - 7	) <b>=</b>	07:1	<b>=</b>
METALS	ALUMINUM	8400		13200		8270		11300	)	12400	•	12400	>
	ARSENIC	6.65		6.18		4.82		5.65		5.25		00 P	
	BARIUM	7.76		123		75.8		101		104		<u> </u>	
	BERYLLIUM	0.427	n	0.668		0.427	n	0.561		0.552		0.477	=
	CADMIUM	1.2	Ω	1.2	Ω	1.2	Ω	1.2	Ω	1.2	1	1 2	=
	CALCIUM	28000		16500		6140		19900		14600	)	14100	)
	CHROMIUM	10.4		14.4		66.6		14.1		14.6		15.1	
	COBALT	3.58		3.28		2.84		3.62		3.6		3.68	
	COPPER	12.5		12.7		10.2		11.3		10.5		66.6	
	IKON	12700		15400		10700		12700		13400		13200	
	LEAD	10.2		8.88		80.6		14.1		8.52		7.44	=
	MAGNESIUM	5330		7330		4070		4770		5560		5390	)
	MANGANESE	226		351		233		202		265		255	
	MERCURY	0.058		0.05	Þ	0.05	Ω	0.05	Ω	0.05	Ω	0.05	n
	NICKEL	7.49	-	8.74	-	7.11	-	8.48	-	7.52	_	7.04	-
	PULASSIUM	2500		4700		2840		3460		3960		4000	
	SILVEK	0.803	n	0.803	n	0.803	n	0.803	Ω	0.803	Ω	0.803	n
	SODIUM	124		172		1117		199		198		203	
	VANADIUM	16.7		50.6		14.4		20.3		20.9		21.2	
	ZINC	36.7		45		31.5		37.5		37		35	
SEMINOLATILES	2,4-DINITROTOLUENE	VA		Ϋ́		NA		۲×		Ϋ́N		ž	
	Z,6-DINITROTOLUENE	NA		Ϋ́Z		٧×		٧X		Ϋ́		X	
	DIETHYL PHIHALATE	YZ		×Z		ΥN		۷X		Ϋ́		ž	
	DIMETHYL PHIHALATE	YZ :		¥Z		٧X		٧X		×		ΥN	
	DI-N-BULYL PHIHALATE	٧×		Z		Š		Ϋ́		Y N		414	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

C	-	ARP-94-30A		ARP-94-31A	ARP-94-32A	32A	ARP-9	4-33A	ARP-	ARP-94-34A	APP-04.15A	1.35 A
Group	Analytes	0.5 ก	0	0.5 ft	0.5 ft		0.5 ft	=	0	0.5 ft	0.5 ft	<u> </u>
ANIONS	NITRATE	¥ N	;		;							
	THIGHIN	V. :	NA NA		Š		Ϋ́		ž		٧Z	
STATE OF ITAL	MILLIE	Y N	٧X		٧X		NA		X		Z	
EAFLUSIVES	1,3,5-1 KINITROBENZENE	0.922 U	0.922	Ω	0.922	Ω	0.922	n	0.922	Ξ	0 922	11
	2,4-DINITROTOLUENE	2.5 U	2.5	n	2.5	Ω	2.5	Ω	2.5	=	2 5	=
	2,4,6-TRINITROTOLUENE	2 U	2	Ω	2	Ω	7	=	} ~	<b>=</b>		<b>&gt;</b> =
	2,6-DINITROTOLUENE	2 U	2	Ω	6	=	, ,	· =	٠ د	> =	9 (	<b>&gt;</b> :
	HMX	2 U	2	=	, ,	) <b>=</b>	٠, د	> =	4 6	<b>&gt;</b> :	7 (	<b>)</b>
	NITROGUANIDINE	×	Z	)	۹۷	<b>-</b>	۷ ¥	>	7	<b>-</b>	7	D
	RDX	1 28 11	00.1	:	5 C	:	¥ ;	;	YZ.		۲ ۲	
	TETRYI	0 97.1	07.1	⊃;	1.28	<b>.</b>	1.28	D	1.28	n	1.28	D
METAIS	ALIMINI	0 11.7	7.11	>	2.11	<b>-</b>	2.11	n	2.11	n	2.11	
METALO	ALUMINUM	8810	13000		9300		11500		5620		5020	)
	ARSENIC	5.5	11.7		4.77	ſ	4.15	_	6.89	-	=======================================	-
	BAKIUM	97.5	91.1		89.5		95.9		248	•	73.4	•
	BEKYLLIUM	0.427 U	0.427	Ω	0.427	=	0 487		0.427	=	1.57	:
	CADMIUM	1.2 U	1.2	Ω	1.2	· D	2	=	1.2	> =	124.0	) <b>:</b>
	CALCIUM	16400	85000		20000	)	14700	•	26300	>	30000	)
	CHROMIUM	10.9	15.4		12.1		2 7		3 5		20000	
	COBALT	3.61	3.72		3 01		2.4.5				8.83	;
	COPPER	11.5	7.0		1.71		3.41		3.47		2.5	<b>-</b>
	IRON	13000	9.74		8.48		8.61		182		9.46	
	LEAD	0000	13900		12100		12500		9940		8300	
	MACMERINA	17.7	10.4		7.44	5	9.24		1600		36.6	
	MANICANESICIA	5210	10300		4930		4690		4680		5450	
	MEDICITIES	243	212		212		226		176		158	
	MERCORI	0.05 U	0.05	n	0.05		0.05	n	0.02	Ω	0.05	11
	MCKEL	8.06 J	11.50	-	88.9		19.9		5.23		80.9	)
	FULASSIUM	2690	3270		2900		3550		1890		1420	
	SILVER	0.803 U	0.803	Ω		ם	0.803	Ω	0.803	=	0 803	1
	SUDIOM	132	2830		155		192		88.1	,	6	)
	MOIOW	16.8	25.3		18.8		20.9		2.99	Ω	2.99	
CEMINAL ATTLES	CINC CONTRACTOR CONTRA	36.7	33.3		30.9		33.3		162		417	<b>)</b>
SEMINOLATILES	2,4-DINITROLOCUENE	٧×	ΥN		Ϋ́		NA		V		Ž	
	2,6-DINITROTOLUENE	¥z	٧X		Ϋ́		ΝA		×		Ž	
	DIETHYL PHIHALATE	YZ :	٧X		Ϋ́		NA		N		ž	
	MINISTRIC PHINALALE	VZ :	۷ ۷		۷۷		Ϋ́		Ν		ž	
	DI-N-BOI YL PHIHALAIE	NA	NA		ΥN		AN		Z		Ž	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Surface Soil (continued)

Group	Analytes	ARK-94-36A 0.5 ft	30A	0.5 ft	0.5 ft	AKP-94 0.5 ft	AKP-94-38A 0.5 ft	AKP-94-39A 0.5 ft	4-39A	ARP-94-40A 0.5 ft	4-40A ft	ARP-94-41A 0.5 ft	ت 41۸
AMOINE	NITBATE	2		;				;					
CHOTHE	NITRITE	Y :		ž:		ž:		Y ;		YZ :		YZ.	
EVDI OCHVEC	MILKIE 13 F TRIMITACERNIZANIE	VV C	;	Y S	;	Š.	1	Y Z		×		×z	
CAPLUSIVES	1,3,5-1 KINII KOBENZENE	0.922	<b>D</b>	0.922	D	0.922	n	0.922	n	0.922	D	0.922	n
	2,4-DINITROTOLUENE	2.5	n	2.5	n	2.5	Þ	2.5	n	2.5	n	2.5	n
	2,4,6-TRINITROTOLUENE	2	n	7	n	4.62		7	Ω	7	n	7	n
	2,6-DINITROTOLUENE	7	n	7	n	7	n	7	Ω	7	n	2	
	HMX	7	n	7	Ω	e		2	Ω	7	n	5	
٠	NITROGUANIDINE	NA		٧		Ϋ́		Ϋ́Z		N.		X	)
	RDX	1.28	n	1.28	Ω	2.31		1.28	Ω	1.28	=	1 28	=
	TETRYL	2.11	Ω	2.11	Ω	2.11	n	2.11	n	2.11	D	2.11	
METALS	ALUMINUM	896	Ω	5300		7880		7560		6540		6530	•
	ARSENIC	3.85	_	4.17	ŗ	4.47	-	4.52	-	12.60	•	4.23	_
	BARIUM	55.1		69.2		87.8		9.98		88.5		95.1	
	BERYLLIUM	0.427	Ω	0.427	Ω	0.427	Ω	0.427	n	0.427	n	0.427	=
	CADMIUM	1.2	Ω	1.2	Ω	2.77		1.2	Ω	1.2	n	1.2	Ò
	CALCIUM	15800		16600		13300		21600		39200		24100	
	CHROMIUM	5.39		7.81		9.72		8.47		8.24		1.67	
	COBALT	2.5	n	3.55		3.71		3.53		3.35		3.58	
	COPPER	143		26.3		30.5		7.95		12.1		7.37	
	IRON	7360		8900		11100		10700		9830		9760	
	LEAD	20.4		10.1		19.8		8.11		36.9		7.44	ח
	MAGNESIUM	2520		3430		2020		5110		5790		4460	
	MANGANESE	21.8	Ω	143		255		213		246		184	
	MERCURY	0.058	_	0.05	Ω	0.05	Ω	0.05	n	0.05	Ω	0.059	_
	NICKEL	5.35		4.57		5.73		5.74		6.52		5.34	
	POTASSIUM	818		99		2490		2660		2100		2530	
	SILVER	0.803	n	0.803	n	0.803	Ω	0.803	n	0.803	n	0.803	Ω
	SODIUM	77.4		84.1		107		120		9.96		128	
	VANADIUM	2.99	Ω	2.99	Ω	2.99	Ω	2.99	Ω	2.99	Ω	2.99	D
	ZINC	95.8		33.3		61.1		29.7		59.9		28.1	
SEMIVOLATILES	2,4-DINITROTOLUENE	NA		٧N		٧X		NA		٧N		Y	
	2,6-DINITROTOLUENE	NA		Ϋ́		Ϋ́		ž		٧N		NA	
	DIETHYL PHTHALATE	NA		Ϋ́		Ϋ́		AN		XX		V <sub>N</sub>	
	DIMETHYL PHTHALATE	٧X		٧X		ž		۲×		NA		NA	
	DIA NATITAL DUTUAL ATE	× 12		MIA		11.4		***		:			

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

1		ARP-94-42A	1-42A	ARP-5	ARP-94-43A	ARP-9	ARP-94-44A	ARP-94-45A	4-45A	ARP-9	ARP-94-46A	ARP-94-47A	474
Group	Analytes	0.5 ft	2	0.5 ft	2	0.5 ft	۳	0.5 ft	2	0.5 ft	Ft.	0.5 ft	: نىر <sup>:</sup>
ANIONS	NITRATE	N A		X		Z		Ž		Ž		412	
	NITRITE	NA		×		Y X		Y Z		ξ <b>χ</b>		¥	
<b>EXPLOSIVES</b>	1,3,5-TRINITROBENZENE	0.922	n	0.922	n	0.922	Ω	0.922	1	0 922	=	0 00	=
	2,4-DINITROTOLUENE	2.5	n	2.5	Ω	2.5	n	2.5	· =	2.5	=	2 5	=
	2,4,6-TRINITROTOLUENE	7	Ω	7	Ω	7	n	7	o D	7	) <b>D</b>		=
	2,6-DINITROTOLUENE	7	Ω	7	Ω	7	n	7	n	7	· =	, c	=
	HMX	7	n	7	Ω	7	n	7	î	2	<b>=</b>	1 C	) <b>:</b>
	NITROGUANIDINE	ΥN		٧X		N	)	ž	)	νŽ	)	۷ Z	)
	RDX	1.28	Ω	1.28	Ω	1.28	Ω	1.28		1 28	=	1 28	Ξ
	TETRYL	2.11	Ω	2.11	n	2.11	n	2.11	D	2.11	· =	2.11	=
METALS	ALUMINUM	7770		12100		6830		15900		13200	<b>.</b>	16000	)
	ARSENIC	4.36	-	4.09	ſ	4.79	_	8.89		7.28		4 73	
	BARIUM	93.7		114		101		300		112		123	
	BERYLLIUM	0.478		0.536		0.427	Ω	909.0		0.522		0.594	
	CADMIUM	1.2	n	1.2	n	1.2	Ω	1.2	Ω	1.2	=	- 22	Ξ
	CALCIUM	18200		31200		27600		IE+05		23400	,	14800	)
	CHROMIUM	8.63		13.1		8.02		13.4		14.6		18.3	
	COBALT	3.59		3.85		3.73		3.57		4.77		4.33	
	COPPER	9.5		9.76		8.99		11.1		13.2		13.8	
	IRON	11700		13300		11500		10900		12600		14600	
	LEAD	8.15		7.44	n	7.44	Ω	7.44	Ω	16.5		16.3	
	MAGNESIUM	2660		6500		4680		51800		5940		6230	
	MANGANESE	592		227		215		569		252		303	
	MERCURY	0.05	n	0.05	Ω	0.02	Ω	0.02	n	0.05	Ω	0.065	ĭ
	NICKEL	6.39		7.4		69.9		9.5		8.17		8.4	
	POTASSIUM	2870		3770		2590		4630		4390		5220	
	SILVER	0.803	n	0.803	n	0.803	Ω	0.803	Ω	0.803	Ω	0.803	
	SODIUM	102		270		350		9970		382		420	)
	VANADIUM	2.99	Ω	19.6		2.99	Ω	25		21.6		26.3	
	ZINC	33.4		35.9		30.3		37.8		48.3		44.5	
SEMIVOLATILES	2,4-DINITROTOLUENE	Y Y		٧		Υ		٧N		×		×	
	2,6-DINITROTOLUENE	NA		×		NA		ΥN		Y'N		×	
	DIETHYL PHTHALATE	٧X		٧N		NA		NA		٧X		×	
	DIMETHYL PHTHALATE	٧X		×Z		Ϋ́		Ν		٧X		N V	
	DI-N-BUTYL PHTHALATE	ΑΝ		٧N		NA		NA		Ϋ́N		×Z	

# Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Group	Analytes	ARP-94-48A 0.5 ft	148A ft	ARP-94-	ARP-94-49A 0.5 ft	ARP-94-49A 0.5 ft (dup)	4-49A (dup)	ARP-94-5 0.5 ft	ARP-94-50A 0.5 ft	ARP-94-5 0.5 ft	ARP-94-51A 0.5 ft	ARP-94-52A 0.5 ft	-52A it
ANIONS	NITRATE	Ž		Ž		Z		Ž		2		AIA	
	NITRITE	; z		Z Z		Y Z		<		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		< ×	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	Ω	0.922	Ω	0.922	Ω	0.922	=	3.27		0 92	Ξ
	2,4-DINITROTOLUENE	8.15		2.5	D	2.5	n	2.5	n	2.5	=	2.5	=
	2,4,6-TRINITROTOLUENE	14.4		2	n	7	Ω	7	n	7	o D	7	ò
	2,6-DINITROTOLUENE	2	Ω	7	D	7	Ω	7	Ω	7	Ω	7	n
	HMX	485		7	Ω	. 2	n	7	n	20	Ω	7.05	
	NITROGUANIDINE	Y V		ž		Ϋ́N		Ϋ́		N A		N	
	RDX	3200		1.28	Ω	1.28	Ω	1.28	n	1.28	Ω	9.29	
	TETRYL	2.11	n	2.11	Ω	2.11	Ω	2.11	n	2.11	Ω	2.11	n
METALS	ALUMINUM	17200		11400		11700		7320		9180		9230	
	ARSENIC	4.29		7.36		10.1		5.75		10.5		4.44	
	BARIUM	2800		96.3		112		9.79		87.6		88	
	BERYLLIUM	0.427	n	0.481		0.536		0.427	n	0.427	Ω	0.427	D
	CADMIUM	3.6		1.2	Ω	1.2	Ω	1.2	n	3.13		2.37	
	CALCIUM	0686		21700		26200		34200		22200		20200	
	CHROMIUM	44.3		13.3		12.4		10.1		10.9		16.7	
	COBALT	3.89		5.02		6.19		2.63		2.97		3.92	
	COPPER	43.6		11.5		14.3		12.4		14.9		224	
	IRON	13200		13200		14200		8720		11100		12300	
	LEAD	18.6		15.3		21.3		15.6		16.4		25.8	
	MAGNESIUM	4640		4970		6010		4420		4300		4820	
•	MANGANESE	26.7	n	229		286		163		197		208	
	MERCURY	0.05	n	0.02	Ω	0.05	Ω	0.05	n	0.05	n	0.05	n
	NICKEL	25		9.03		9.32		4.84		7.82		9.34	
	POTASSIUM	3830		3340		3550		1910		2580		3400	
	SILVER	0.803	n	0.803	D	0.803	D	0.803	Ω	0.803	Ω	0.803	n
	SODIUM	761		240		161		506		230		671	
	VANADIUM	49.6		19.5		18.6		3.29	Ω	16.7		16.5	
	ZINC	999		40.4		50.6		40.8		31		157	
SEMIVOLATILES	2,4-DINITROTOLUENE	٧×		Y N		NA		Ϋ́		Ϋ́N		٧N	
	2,6-DINITROTOLUENE	٧×		Y Z		NA		ΥN		۲X		Ϋ́N	
	DIETHYL PHTHALATE	Y X		×Z		NA		V		Ϋ́		ΥN	
	DIMETHYL PHTHALATE	NA		ΥN		ΝA		٧X		NA		N	
	DI-N-BUTYL PHTHALATE	NA		Ž		X		Z		N		Y N	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Surface Soil (continued)

		ARP.	ARP-94-53A	ARP-5	ARP-94-54A	ARP-94-55A	4-55A	ARP-9	ARP-94-56A	ARP-0	ARP-94.57A	VD-04	58 A
Group	Analytes	0.	0.5 ft	0.5 ft	۳	0.5 ft	2	0.5 ft	ı,	0.	0.5 ft	0.5 ft	ابر 5
ANIONS	NITRATE	X		X		X		Ž		X		Z	
	NITRITE	YZ Z		Y.		VV		Y X		×		ź	
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	n	0.922	Ω	0.922	n	0.922	n	0.922	UR	0.922	UR
	2,4-DINITROTOLUENE	2.5	n	3.63		2.5	n	2.5	n	2.5	Ω	2.5	n
	2,4,6-TRINITROTOLUENE	2	ລ	7	n	7	n	7	n	7	Ω	7	n
	2,6-DINITROTOLUENE	2	n	7	n	7	n	7	n	2	Ω	7	n
	HMX	7	D	3.76		7	Ω	7	n	2	Ω	2	Ω
	NITROGUANIDINE	Ϋ́Z		Ϋ́Z		Ν		Ϋ́		VN		Ϋ́	
	RDX	1.28	n	,10.2		2.48		1.28	n	1.28	Ω	1.28	n
	TETRYL	2.11	n	2.11	Ω	2.11	Ω	2.11	Ω	2.11	Ω	2.11	Ω
METALS	ALUMINUM	9450		8480		9450		8430		7820		15700	
	ARSENIC	4.91		5.21		4.59		17.9		4.47		4.8	
	BARIUM	80.2		74.9		86.2		8.96		68.5		140	
	BERYLLIUM	0.427	n	0.427	Ω	0.427	n	0.427	Ω	0.427	. <b>⊃</b>	0.691	
	CADMIUM	1.2	Ω	6.31		1.2	n	2.11		1.2	Ω	1.2	ם
	CALCIUM	31200		12100		15600		33700		6950		6020	
	CHROMIUM	13		12.8		10.9		11.4		11.1		17.1	
	COBALT	2.73		5.6		3.66		2.5	Ω	3.33		5.26	
	COPPER	22.3		53.2		17.1		65.3		10.4		16.1	
	IRON	11300		11200		11800		9550		10900		17000	
	LEAD	14.4		18.5		11.8		66.5		1		10.6	
	MAGNESIUM	4890		4400		2090		6490		4130		7930	
	MANGANESE	202		220		248		223		206		462	
	MERCURY	0.02	n	0.02	Ω	0.05	Ω	0.05	Ω	0.05	Ω	0.05	n
	NICKEL	6.5		8.23		7.93		5.89		4.8		9.37	
	POTASSIUM	2650		2450		3170		2390		2340		5280	
	SILVER	0.803	n	0.803	n	0.803	n	0.803	n	0.803	Ω	0.803	n
	SODIUM	254		137		154		169		131		252	
	VANADIUM	17.2		3.29	n	16.8		3.29	n	3.56	n	24.60	-
	ZINC	49.5		237		34.5		86.1		28.4		50.7	
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́		۷X		NA		٧X		٧X		Ϋ́	
	2,6-DINITROTOLUENE	٧X		Ϋ́		NA		٧X		Y <sub>N</sub>		٧X	
	DIETHYL PHTHALATE	Ϋ́Z		Ϋ́Z		NA		×		Ϋ́		NA	
	DIMETHYL PHTHALATE	₹ Z		¥		۷X		×		Ϋ́		NA	
	DI-N-BUTYL PHTHALATE	NA		NA		NA		٧X		Ϋ́Z		N A	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Croun.	4 1 4	AKP-94-59A	۷ <u>۲</u> ۰	AKF.	AKF-94-60A	ARP-9	ARP-95-01A	ARP-9	ARP-95-02A	ARP-9	2-03V	ARS-95-01	5-01
dnoin	Analytes	0.5 ft	=	0	0.5 ft	0.5 ft	E E	0.5 ft	2	0.5 ft	z	0.5 ft	ı,
ANIONS	NITRATE	N		X		Ϋ́		Ž		Ž		-	Ξ
	NITRITE	ΥN		ΥN		ž		Ϋ́		ŽŽ		- 2	)
EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	UR	0.922	UR	0.922	Ω	0.922	Ω	0.922	=	0.922	
•	2,4-DINITROTOLUENE	2.5	n	2.5	n	2.5	Ω	2.5	n	2.5	· <b>=</b>	2 5	=
	2,4,6-TRINITROTOLUENE	2	n	7	n	7	n	7	Ω	7	'n	2	) <b>=</b>
	2,6-DINITROTOLUENE	2	n	7	n	7	n	7	D	7	· =	, ,	· =
	HMX	2	Ω	7	n	7	Ω	7	ח	7	· =	ى د	=
•	NITROGUANIDINE	Ϋ́		Y.		Ϋ́		×	)	ž	)	0 081	)
	RDX	1.28	Ω	1.28	Ω	1.28	D	1.28	=	1 28	=	1 28	Ξ
	TETRYL	2.11	Ω	2.11	Ω	2.11	Ω	2.11	'n	2.11	o D	2.11	=
METALS	ALUMINUM	14800		10200		Ϋ́		Ϋ́		ž	)	Ž	)
	ARSENIC	2.54		4.38		۲X		٧X		X		×	
	BAKIUM	132		77.8		۷		ΥN		٧N		NA	
	BERYLLIUM	0.624		0.427	ח	Ν		٧X		Ϋ́Z		×	
	CADMIUM	1.2	Ω	1.2	Ω	N		NA		X		×	
	CALCIUM	6280		5840		Ν		NA		××		×	
	CHROMIUM	17.4		13.9		۷X		×		Ϋ́		ž	
	COBALT	6.75		2.5	D,	۷X		ž		۲X		ž	
	COPPER	15.7		13.2		Ν		Ϋ́		۷N		NA V	
	IKON	15800		12100		VV		Ϋ́		NA		XX	
	LEAD	18.1		14.4		Ν		NA		NA		XX	
	MAGNESIUM	0299		4510		NA		Ϋ́		Ν		YN.	
	MANGANESE	395		227		Ϋ́		Ν		NA		X	
	MERCURY	0.05	n	0.02	Ω	Ϋ́		Ϋ́		NA		Y	
	NICKEL	9.14		6.12		Ϋ́		Ϋ́		ΥN		Y.	
	FULASSIUM	4620		3200		×z		NA		Ϋ́		٧X	
	SILVER	0.803	D	0.803	n	ΝA		Ν		Ϋ́		VV	
	SODIOM	569		183		××		ΥN		٧X		Ϋ́	
	VANADIUM	25.6	_	19.80	-	×z		×z		Ν		X	
	ZINC	47.2		34.2		٧×		٧X		Ϋ́		X	
SEMIVOLATILES	2,4-DINITROTOLUENE	Y V		Ν		Ν		٧X		××		1.4	
	2,6-DINITROTOLUENE	Ϋ́Z		Ϋ́		٧×		××		٧X		0.32	
	DIETHYL PHTHALATE	Y X		Y Z		ž		Ϋ́Х		Y'N		0.24	=
	DIMETHYL PHTHALATE	۷ ۲		Š		Ϋ́		NA		NA		0.063	ם כ
	DI-N-RIITYI PHTHAI ATE	٧Z		N. A.		7.7		:					

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

		1 10 00 1		20.00								
Ţ		AU-52-02		AKS-35-03	AKS	35-04	AKS	75-05	ARS-95-06	90-56	ARS-95-	-04
Group	Analytes	0.5 ft		0.5 ft	0	0.5 ft	0.5 ft	ı	0.5 ft	z	0.5 ft	
ANIONS	NITRATE	33	-	9	-	1	33 3		7 46			
	NITRITE	S V	: 2	` <	- V	>	5.5		C+./		1.5	
EXPLOSIVES	1.3.5-TRINITROBENZENE	0.922	<i>22</i> 6 0		0 0	=	V 000	=	\Z\	=	AN C	Ĺ
	2.4-DINITROTOLUENE				2 5	) <b>=</b>	7 5	) <b>=</b>	226.0	> =	776.0	> <b>=</b>
	2,4,6-TRINITROTOLUENE	2 10		) <b>=</b>	; c	) <b>=</b>		> =	ر" د	<b>=</b>	۲.,	> =
	2.6-DINITROTOLIJENE				3 6	<b>=</b>	٦ ٢	> =	۱ ر	:	4 (	) <b>:</b>
	HMX				۱ ,	<b>&gt;</b>	۷ (	<b>)</b> :	7	>	7 (	<b>)</b> ;
	NITEDOCTIANIENE				7	<b>)</b>	7	>	4.74		7	D
	NITROGUANIDINE				0.045	n	0.208		0.045	n	0.045	n
	RDX		•		1.28	Ω	2.78		45.3		1.28	n
	TETRYL				2.11	n	2.11	n	2.11	Ω	2.11	ב
METALS	ALUMINUM	۷N	Z	V	AN		NA		Ϋ́N		×	
	ARSENIC	NA	Z	¥	N		NA		Ϋ́		Ϋ́	
	BARIUM	NA	Z	<b>V</b>	ΥZ		Ϋ́		Ϋ́		×	
	BERYLLIUM	Ϋ́	Z	<	Š		٧×		YZ		×	
	CADMIUM	۷	Z	<	NA		NA		٧X		×Z	
	CALCIUM	Y V	Z	<	٧X		Ϋ́		٧X		××	
	CHROMIUM	Ν	Z	<b>⋖</b>	Ϋ́N		NA		X		Ϋ́	
	COBALT	Ν	Z	<b>⋖</b>	NA		٧X		Ν		NA	
	COPPER	Ϋ́	Z	<	٧×		Ϋ́		٧N		Ϋ́N	
	IRON	NA NA	Z	<	٧X		Ϋ́		NA		٧X	
	LEAD	ΥN	Z	•	Ϋ́		ΝA		Y Z		٧×	
	MAGNESIUM	Ν	z	⋖	ΥN		Ϋ́		٧×		NA	
	MANGANESE	۷¥	z	~	NA		Ϋ́N		٧٧		NA	
	MERCURY	ΥN	Ż	⋖	٧X		NA		Ν		VV	
	NICKEL,	ΥN	Ź	_	Ϋ́Z		NA		Ν		NA	
	POTASSIUM	Y V	Ż	_	۷X		Y N		Ν		٧V	
	SILVER	Ϋ́Z	Ż	_	٧X		٧N		Ϋ́		Ϋ́	
	SODIUM	٧Z	z	_	٧x		٧X		Ν		٧V	
	VANADIUM	ΥN	Ż	-	٧X		ΥN		×Z		Ϋ́	
	ZINC	٧×	Ż	_	٧X		Ϋ́		NA		Ϋ́	
SEMIVOLATILES	2,4-DINITROTOLUENE		<u>~</u> :	n	1.4	Ω	1.4	n	1.4	Ω	1.4	Ω
	2,6-DINITROTOLUENE		0.3	2 O	0.32	Ω	0.32	n	0.32	n	0.32	n
	DIETHYL PHTHALATE		0.7	4 U	0.24	n	8.9		0.24	Ω	5.8	
	DIMETHYL PHTHALATE	0.063 U	0.0	3 U	0.063	Ω	8.5		0.16		0.063	Ω
	DI-N-BUTYL PHTHALATE	į	1	D	1.3	n	1.3	U	1.3	Ω	1.3	D

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

NITRATE			ARS-95-08	2-08	ARS-95-09	5-09	ARS-95-10	5-10	ARS-9	5-10	
NITRATE  NA  NA  NA  NA  NA  NA  NA  NA  NA  N	Group	Analytes	0.5	اید	0.5	T.	0.5	F	0.5 ft	(dnb)	
NITRITE  1,3,5-TRINITROBENZENE  2,4-6-TRINITROTOLUGNE  2,1-1 0 2,1 0 2, 0 0  2,5-5 U 2,2 U	ANIONS	NITRATE	-	Þ	2.89		1.63		-	11	
1,3,5-TRINITROBENZENE 0,922 U 0,923 U 0,924 U 0,923 U 0,924 U 0,923 U 0,924 U		NITRITE	٧×		X		ž		×		
2.4-DINITROTOLUENE         2.5         U	EXPLOSIVES	1,3,5-TRINITROBENZENE	0.922	Ω	0.922	D	0.922	Ω	0.922	Ω	
2,4,6-TRINITROTOLUENE         2         U         2         U         2         U         2         U         1         U         1         U         1         U         1         U         1         U         1         U         1         U         1         U         1         U         1         U         1         U         1         U         1         U         1         U         1         U         U         1         U         U         1         U		2,4-DINITROTOLUENE	2.5	Ω	2.5	Ω	2.5	n	2.5	Ω	
2,6-DINITROTOLUENE         2         U         3         U         3         U         3         3         3         6         3         3         3         3         3         3         3         3         4         0         3         1         3         1         3         1         3         1         3         1         3         1         3         1         3		2,4,6-TRINITROTOLUENE	7	Ω	7	Ω	7	n	7	n	
HMX  NTROGUANIDINE  NTROGUANIDINE  1.28  1.28  1.28  1.29  1.21  1.28  1.21  1.22  1.23  1.21  1.23  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.21  1.22  1.23  1.21  1.23  1.21  1.23  1.21  1		2,6-DINITROTOLUENE	7	n	7	n	7	n	7	Ω	
NITROGUANIDINE 0.045 U 0.35 0.148  RDX TETRYL ALUMINUM NA NA NA NA NA NA NA NA NA NA NA NA NA		HMX	7	Ω	7	Ω	2	=	3.15		
RDX         LTSRYL         1.28         U         1.28         U         5.63           ALUMINUM         NA         NA         NA         NA           ARSENIC         NA         NA         NA         NA           BARUM         NA         NA         NA         NA           BARUM         NA         NA         NA         NA           BARYLLIUM         NA         NA         NA         NA           CALCIUM         NA         NA         NA         NA           CALCIUM         NA         NA         NA         NA           COPER         NA         NA         NA         NA           ROPER         NA         NA         NA         NA           MAGNESEUM         NA         NA         NA         NA           MAGNESEUM         NA         NA         NA         NA           SILVER         NA         NA         NA         NA           SOD		NITROGUANIDINE	0.045	n	0.35	ı	0.148	)	0.235		
TETRYL         2.11         U         2.11         U         2.11         U           ALUMINUM         NA		RDX	1.28	Ω	1.28	Ω	5.63		43.2		
ALUMINUM         NA         NA         NA           ARSENIC         NA         NA         NA           BARRUM         NA         NA         NA           BARRUM         NA         NA         NA           CADMUM         NA         NA         NA           CALCIUM         NA         NA         NA           CALCIUM         NA         NA         NA           COBALT         NA         NA         NA           COPER         NA         NA         NA           COPER         NA         NA         NA           RON         NA         NA         NA           MAGNESIUM         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           NICKEL         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VA-DINITROTOLUBNE         0.32         U         0.32         U           Z-G-DINITROTOLUBNE <td></td> <td>TETRYL</td> <td>2.11</td> <td>Ω</td> <td>2.11</td> <td>Ω</td> <td>2.11</td> <td>n</td> <td>8.03</td> <td></td> <td></td>		TETRYL	2.11	Ω	2.11	Ω	2.11	n	8.03		
ARSENIC         NA         NA         NA           BARUUM         NA         NA         NA           BARUUM         NA         NA         NA           CADMIUM         NA         NA         NA           CALCIUM         NA         NA         NA           CALCIUM         NA         NA         NA           COBALT         NA         NA         NA           COPER         NA         NA         NA           COPER         NA         NA         NA           COPER         NA         NA         NA           RON         NA         NA         NA           MAGNESIUM         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           NICKEL         NA         NA         NA           NICKEL         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           SODIUM         NA         NA	METALS	ALUMINUM	٧X		٧X		NA		N N		
BARIUM         NA         NA         NA           CADMUM         NA         NA         NA           CADMUM         NA         NA         NA           CALCIUM         NA         NA         NA           CHROMIUM         NA         NA         NA           COBALT         NA         NA         NA           COBALT         NA         NA         NA           COBALT         NA         NA         NA           COPPER         NA         NA         NA           RON         NA         NA         NA           RON         NA         NA         NA           MAGNESIUM         NA         NA         NA           MARCURY         NA         NA         NA           NICKEL         NA         NA         NA           NICKEL         NA         NA         NA           NICKEL         NA         NA         NA           SODIUM         NA         NA         NA           SODIUM         NA         NA         NA           VANDIUM         NA         NA         NA           Zi-DINITROTOLUENE         1.4         U		ARSENIC	AN		YZ		Ϋ́		N A		
BERYLLIUM         NA         NA         NA           CADMIUM         NA         NA         NA           CALCIUM         NA         NA         NA           CALCIUM         NA         NA         NA           COBALT         NA         NA         NA           COPPER         NA         NA         NA           IRON         NA         NA         NA           IRON         NA         NA         NA           IRON         NA         NA         NA           MAGNESIUM         NA         NA         NA           MANGANESE         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           Z,4-DINITROTOLUENE         0.32 <td></td> <td>BARIUM</td> <td>٧X</td> <td></td> <td>Ϋ́Z</td> <td></td> <td>NA</td> <td></td> <td>Y.</td> <td></td> <td></td>		BARIUM	٧X		Ϋ́Z		NA		Y.		
CADMIUM         NA         NA         NA           CALCIUM         NA         NA         NA           CHROMIUM         NA         NA         NA           COBALT         NA         NA         NA           COPPER         NA         NA         NA           IRON         NA         NA         NA           IRON         NA         NA         NA           MAGNESIUM         NA         NA         NA           MANGANESIUM         NA         NA         NA           NICKEL         NA         NA         NA           NICKEL         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           Z,G-DINITROTOLUENE		BERYLLIUM	AN		Y		×		×		
CALCIUM         NA         NA         NA           CHROMIUM         NA         NA         NA           COBALT         NA         NA         NA           COPPER         NA         NA         NA           IRON         NA         NA         NA           IRON         NA         NA         NA           IRON         NA         NA         NA           MAGNESIUM         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           MARCURY         NA         NA         NA           MICKEL         NA         NA         NA           NICKEL         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           Z,4-DINITROTOLUENE         0.24         U         0.24         U           DIETHYL PHTHALAT<		CADMIUM	Ϋ́		٧×		YZ.		ž		
CHROMIUM         NA         NA         NA           COBALT         NA         NA         NA           COPPER         NA         NA         NA           IRON         NA         NA         NA           LEAD         NA         NA         NA           MAGNESIUM         NA         NA         NA           MANGANESE         NA         NA         NA           NICKEL         NA         NA         NA           NICKEL         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           Z,6-DINITROTOLUENE         0.32         U         0.32         U           DIETHYL		CALCIUM	Ϋ́Z		Ϋ́		N		Ϋ́		
COBALT         NA         NA         NA           COPPER         NA         NA         NA           IRON         NA         NA         NA           LEAD         NA         NA         NA           MAGNESIUM         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           MICKEL         NA         NA         NA           NICKEL         NA         NA         NA           NICKEL         NA         NA         NA           POTASSIUM         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           ZINC         NA         NA         NA           Z,4-DINITROTOLUENE         0.32         U         0.32         U           DIETHYL PHTHALATE         0.063         U         0.063         U         0.		CHROMIUM	X		Z		×		ž		
COPPER         NA         NA         NA           IRON         NA         NA         NA           LEAD         NA         NA         NA           MAGNESIUM         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           MERCURY         NA         NA         NA           NICKEL         NA         NA         NA           NICKEL         NA         NA         NA           POTASSIUM         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           SODIUM         NA         NA         NA           ZINC         NA         NA         NA           ZINC         NA         NA         NA           Z,4-DINITROTOLUBNE         0.32         U         0.32         U           DIETHYL PHTHALATE         0.063         U         0.063         U         0.063         U           DI-N-BUTYL PHTHALATE         1.3		COBALT	Z		X		Ϋ́		ź		
IRON         NA         NA         NA         NA           LEAD         NA         NA         NA         NA           MAGNESIUM         NA         NA         NA         NA           MANGANESE         NA         NA         NA         NA           MANGANESE         NA         NA         NA         NA           MERCURY         NA         NA         NA         NA           NICKEL         NA         NA         NA         NA           NICKEL         NA         NA         NA         NA           POTASSIUM         NA         NA         NA         NA           SILVER         NA         NA         NA         NA           SODIUM         NA         NA         NA         NA           ZINC         NA         NA         NA         NA           ZINC         NA         NA         NA         NA           Z,6-DINITROTOLUBNE         0.32         U         0.32         U         0.32         U           Z,6-DINITRALATE         0.063         U         0.063         U         0.063         U         0.063         U           DI-N-BUTYL PHTHALATE<		COPPER	٧X		Ϋ́		VN.		×		
LEAD         NA         NA         NA           MAGNESIUM         NA         NA         NA           MANGANESE         NA         NA         NA           MANGANESE         NA         NA         NA           MERCURY         NA         NA         NA           NICKEL         NA         NA         NA           NICKEL         NA         NA         NA           POTASSIUM         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           SODIUM         NA         NA         NA           ZINC         NA         NA         NA           ZINC         NA         NA         NA           ZINC         NA         NA         NA           Z,6-DINITROTOLUBNE         0.32         U         0.32         U           DIETHYL PHTHALATE         0.24         U         0.24         U         0.063         U           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         1.3         U		IRON	VΝ		NA		AN		AN		
MAGNESIUM         NA         NA         NA           MANGANESE         NA         NA         NA           MERCURY         NA         NA         NA           NICKEL         NA         NA         NA           POTASSIUM         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           ZINC         0.32         U         0.32         U           DIETHYL PHTHALATE         0.24         U         0.063         U         0.063         U           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         1.3         U		LEAD	٧N		Ϋ́		NA		X		
MANGANESE         NA         NA         NA           MERCURY         NA         NA         NA           NICKEL         NA         NA         NA           POTASSIUM         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           ZINC         0.32         U         0.32         U           DIETHYL PHTHALATE         0.24         U         0.063         U         0.063         U           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         1.3         U		MAGNESIUM	٧X		ΥN		VN		×		
MERCURY         NA         NA         NA           NICKEL         NA         NA         NA           POTASSIUM         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           ZINC         0.32         U         0.32         U           DIETHYL PHTHALATE         0.24         U         0.063         U         0.063         U           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         1.3         U		MANGANESE	Y V		٧X		NA		N		
NICKEL         NA         NA         NA           POTASSIUM         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           ZINC         NA         NA         NA           ZIA-DINITROTOLUENE         1.4         U         1.4         U           Z,6-DINITROTOLUENE         0.32         U         0.32         U         0.32         U           DIETHYL PHTHALATE         0.24         U         0.24         U         3.1         D           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         1.3         U		MERCURY	Y V		Ν		N		NA		
POTASSIUM         NA         NA         NA           SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           ZINC         NA         NA         NA           Z,4-DINITROTOLUENE         1.4         U         1.4         U           Z,6-DINITROTOLUENE         0.32         U         0.32         U           DIETHYL PHTHALATE         0.063         U         0.063         U         0.063         U           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         1.3         U		NICKEL	Ϋ́N		٧X		N		V		
SILVER         NA         NA         NA           SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           ZINC         NA         NA         NA           Z,4-DINITROTOLUENE         1.4         U         1.4         U           Z,6-DINITROTOLUENE         0.32         U         0.32         U           DIETHYL PHTHALATE         0.24         U         0.32         U           DI-N-BUTYL PHTHALATE         0.063         U         0.063         U         0.063           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         1.3		POTASSIUM	ΥN		Ν		NA		٧X		
SODIUM         NA         NA         NA           VANADIUM         NA         NA         NA           ZINC         NA         NA         NA           2,4-DINITROTOLUENE         1.4         U         1.4         U         1.4         U           2,6-DINITROTOLUENE         0.32         U         0.32         U         0.32         U           DIETHYL PHTHALATE         0.063         U         0.063         U         0.063         U         0.063         U           DI-N-BUTYL PHTHALATE         1.3         U         1.3         U         1.3         U		SILVER	NA		Y <sub>N</sub>		NA		Ϋ́N		
VANADIUM         NA         NA         NA           ZINC         NA         NA         NA           2,4-DINITROTOLUENE         1.4         U         1.4         U         1.4         U           2,6-DINITROTOLUENE         0.32         U         0.32         U         0.32         U           DIETHYL PHTHALATE         0.063         U         0		SODIUM	ΝA		×		٧X		Ϋ́N		
ZINC         NA         NA         NA           2,4-DINITROTOLUENE         1.4         U         1.4         U         1.4         U           2,6-DINITROTOLUENE         0.32         U         0.32         U         0.32         U         0.32         U           DIETHYL PHTHALATE         0.063         U         0.063		VANADIUM	٧X		Ν		٧X		٧X		
2,4-DINITROTOLUENE       1.4       U       1.4       U       1.4       U         2,6-DINITROTOLUENE       0.32       U       0.32       U       0.32       U         DIETHYL PHTHALATE       0.24       U       0.24       U       3.1         DIMETHYL PHTHALATE       0.063       U       0.063       U       0.063       U         DI-N-BUTYL PHTHALATE       1.3       U       1.3       U       1.3       U		ZINC	√N V		ΝA		Ν		VN		
0.32 U 0.32 U 0.32 U 0.24 U 0.24 U 3.1 0.063 U 0.063 U 0.063 U E 1.3 U 1.3 U 1.3 U	SEMIVOLATILES	2,4-DINITROTOLUENE	1.4	Ω	1.4	Ω	1.4	Ω	1.4	Ω	
0.24 U 0.24 U 3.1 0.063 U 0.063 U 0.063 U E 1.3 U 1.3 U 1.3 U		2,6-DINITROTOLUENE	0.32	Ω	0.32	Ω	0.32	Ω	0.32	Ω	
. 0.063 U 0.063 U 0.063 U E 1.3 U 1.3 U 1.3 U		DIETHYL PHTHALATE	0.24	Ω	0.24	Ω	3.1		0.24	n	
E 1.3 U 1.3 U 1.3 U		DIMETHYL PHTHALATE	0.063	Ω	0.063	n	0.063	Ω	0.063	U	
			1.3	n	1.3	Ω	1.3	Ω	1.3	Ω	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Surface Soil (continued)

Group ANIONS EXPLOSIVES						TOC-TOTAL	400	AKK-92-401	104-7	AKF-92-402	705-7/	AKF-94-01B	910
ANIONS EXPLOSIVES	Analytes	1 6	2	7	7 ft	10 ft	2	2.7 ft	ı	8.5 ft	۳	3 ft	
EXPLOSIVES	NITRATE	3.36	n	3.36	Ω	3.36	Ω	115		3.36	D	X	
	2,4-DINITROTOLUENE	0.744	Ω	0.744	Ω	0.744	Ω	2.91		0.744	n	2.5	n
	2,4,6-TRINITROTOLUENE	0.931	Ω	0.931	n	0.931	Ω	2.86		0.931	Ω	7	n
	HMX	0.755	Ω	0.755	n	0.755	Ω	2.37		0.755	Ω	7	Ω
	RDX	0.445	n	0.445	Ω	0.808		34		0.445	Ω	1.28	ח
	TETRYL	1.04	n	1.04	Ω	1.04	Ω	18		1.04	Ω	2.11	D
METALS	ALUMINUM	Ν		Ν		Y V		٧		Ϋ́		6430	
	ARSENIC	24	Ω	48	n	24	Ω	72	Ω	24	n	2.82	
	BARIUM	46		. 14		24		110		34		66.69	
	BERYLLIUM	0.078	Ω	0.16	n	0.078	ñ	0.078	Ω	0.078	m	0.427	n
	CALCIUM	NA		Ϋ́		Ϋ́		NA		Ν		11800	
	CHROMIUM	6.22		7.8	Ω	3.9	Ω	I		6.32		8.37	
	COBALT	٧x		Ϋ́		Ϋ́		Ν		٧X		2.5	n
	COPPER	3.9	_	3.9	UR	3.14	-	180		5.36	-	5.36	
	IRON	8100		10000		4700		15000		8900		7310	
	LEAD	5.2		2.5		9.6		51		8.1		7.44	ח
	MAGNESIUM	Ϋ́N		NA		NA		۲×		۲×		2740	
	MANGANESE	۷N		Ϋ́		N		٧×		Ϋ́		22.6	n
	MERCURY	0.026	n	0.026	D	0.031		0.026	Ω	0.026	Ω	0.05	כ
	NICKEL	2.46	n	4.9	n	2.46	n	2.46	Ω	2.46	n	3.69	
	POTASSIUM	NA		Ϋ́		NA		Ϋ́		Ν		1780	
	SILVER	0.05		0.015	D	0.024		0.77		0.025		0.803	n
	SODIUM	٧X		Ϋ́		٧×		Ϋ́		×		332	
	VANADIUM	٧N		٧		VΝ		Ν		٧×		13.7	
	ZINC	16.1		16	Ω	11.5		99		16.7		20.8	
SEMIVOLATILES	2,4-DINITROTOLUENE	0.39	Ω	0.39	Ω	0.39	D	0.39	Ω	0.39	Ω	٧X	
	2,6-DINITROTOLUENE	0.53	Ω	0.53	D	0.53	n	0.53	Ω	0.53	n	NA	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Groun	Analytec	ARP-94-01C	4-01C	ARP-94-02B	4-02B	ARP-94-02C	-02C	ARP-94-03B	4-03B	ARP-94-03C	4-03C	ARP-94-04B	1-04B
	Carlon	1.6	1	2	_	II C		3		2 11	=	3 11	
ANIONS	NITRATE	VV		Ϋ́Z		V.		X		×		V Z	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	n	2.5	Ω	2.5	Ω	2.5	Ω	2.5	n	2.5	
	2,4,6-TRINITROTOLUENE	2	n	7	ņ	7	Ω	7	Ω	7	n	7	n
	HMX	2	n	7	n	7	n	7	Ω	7	Ω	7	Ω
	RDX	1.28	Ω	1.28	Ω	1.28	Ω	1.28	Ω	1.28	o D	1.28	) D
	TETRYL	2.11	D	2.11	n	2.11	n	2.11	D	2.11	ב	2.11	Þ
METALS	ALUMINUM	6640		8300		6930		0006		1060	Ω	11300	
	ARSENIC	3.83		2.94		3.23		3.79		3.18		4.06	
	BARIUM	57.7		, 76.2		8.79		94.3		9.83	n	103	
	BERYLLIUM	0.427	n	0.427	n	0.427	Ω	0.427	Ω	0.427	ח	0.427	ב
	CALCIUM	19100		16900		12700		15700		5320		22400	
	CHROMIUM	12.5		11.1		9.1		10.9		6.21		13.1	
	COBALT	2.92		3.07		2.5	n	3.22		2.5	Ω	3.17	
	COPPER	5.7		6.77		6.87		9.01		5		8.62	
	IRON	10100		09/6		8420		11300		1450	n	12200	
	LEAD	7.44	D	7.44	n	7.44	n	7.44	Ω	7.44	n	7.44	n
	MAGNESIUM	3260		3450		3230		4750		1780		5050	
	MANGANESE	125		119		116		202		22.6	Ω	208	
	MERCURY	0.065	_	0.125	_	0.056	-	0.05	Ω	0.05	n	0.05	n
	NICKEL	5.99		5.03		4.14		6.97		3.45		6.5	
	POTASSIUM	1840		2160		1920		2720		184	Ω	3360	
	SILVER	0.803	n	0.803	Ω	0.803	Ω	0.803	Ω	0.803	n	0.803	n
	SODIUM	285		313		343		180		352		307	
	VANADIUM	21.7		19.1		15.4		18.2		10.9		20.6	
	ZINC	23.8		26.5		21.1		34.8		3.89	Ω	32.1	
SEMIVOLATILES	2,4-DINITROTOLUENE	NA		٧X		NA		ΥN		۷N		Ν	
	2,6-DINITROTOLUENE	NA		NA		VV		Ϋ́		Ϋ́		YZ	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

		ARP-94-04C	4-04C	ARP-	94-05B	ARP-9	4-05C	ARP-9	4-06B	ARP-9	4-06C	ARP-04	-07R
Group	Analytes	S ft	=	3	3 ft	S	5 ft	3 ft		5	5 ft	3 ft	
ANIONS	NITRATE	NA		X		Y.		Y		Ž		Ž	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	n	2.5	Ω	2.5	Ω	2.5	n	2.5	11
	2,4,6-TRINITROTOLUENE	2	Ω	2	n	7	Ω	7	Ω	7	Ω	7	Ò
	HMX	2	n	7	Ω	7	Ω	7	Ω	7	Ω	7	=
	RDX	1.28	n	1.28	n	1.28	Ω	1.28	Ω	1.28	n	1.28	=
	TETRYL	2.11	Ω	2.11	Ω	2.11	n	2.11	n	2.11	n	2.11	<u> </u>
METALS	ALUMINUM	1060	n	13100		12500		15900		12100		18400	)
	ARSENIC	9.14		5.26		5.39		3.48		5.5		4 71	
	BARIUM	9.83	n	134		103		147		110		171	
	BERYLLIUM	0.427	Ω	0.533		0.427	n	0.588		0.525		0.722	
	CALCIUM	30300		27200		15100		40900		20400		38400	
	CHROMIUM	7.79		14.2		13.2		15.2		13.2		16.6	
	COBALT	4.42		5.26		4.41		3.26		3.18		5.78	
	COPPER	6.32		11.1		12.6		11.5		9.74		14.4	
	IRON	13300		16600		21000		14400		14200		17600	
	LEAD	10.9		7.44	n	7.44	n	7.44	D	7.44	Ω	7.44	⊃
	MAGNESIUM	3950		7310		6230		9750		2600		11000	
	MANGANESE	22.6	n	276		198		331		250		408	
	MERCURY	0.05	n	0.05	n	0.02	Ω	0.05	Ω	0.05	Ω	0.05	D
	NICKEL	6.05		8.32		10.4		7.99		7.75		9.31	
	POTASSIUM	184	n	3890		2440		5470		3200		6020	
	SILVER	0.803	n	0.803	D	0.803	n	0.803	Ω	0.803	n	0.803	ם
	SODIUM	326		938		441		1430		1140		2080	1
	VANADIUM	12.3		28.5		20.8		24.1		23.3		29	
	ZINC	3.89	n	45.7		43		41.9		38.5		52.6	
SEMIVOLATILES	2,4-DINITROTOLUENE	٧x		Ϋ́		٧×		Ϋ́		ΥN		ž	
	2.6-DINITROTOLLIENE	Ϋ́N		Y N		VN		Y IX		***			

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

į		ARP-94-07C	-07C	ARP-94-08B	4-08B	ARP-94-08C	4-08C	ARP-94-09B	4-09B	ARP-9	4-09B	ARP-94-09C	9C
Group	Analytes	S ft		3 ft	2	5 ft	2	3	2	3 ft (	3 ft (dup)	5 ft	
ANIONS	NITRATE	Ϋ́		٧٧		×z		Ž		X		Ϋ́	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	n	2.5	Ω	2.5	Ω	2.5	D	2.5	n	2.5	n
	2,4,6-TRINITROTOLUENE	2	n	7	Ω	2	Ω	7	Ω	7	Ω	7	Ω
	HMX	7	n	7	n	2	Ω	7	n	7	Ω	7	n
	RDX	1.28	n	1.28	n	1.28	Ω	1.28	Ω	1.28	n	1.28	D
	TETRYL	2.11	Ω	2.11	n	2.11	ם	2.11	n	2.11	n	2.11	Þ
METALS	ALUMINUM	10100		16900		11000		13500		17300		10300	
	ARSENIC	7.65		3.87		4.86		5.11		5.03		4.39	
	BARIUM	122		,173		102		145		168		119	
	BERYLLIUM	0.427	n	0.731		0.481		0.534		0.665		0.427	n
	CALCIUM	21500		31000		19400		31800		35600		49900	
•	CHROMIUM	9.73		15.8		12.4		13		16.9		0	
	COBALT	3.4		5.73		3.89		5.06		5.32		3.6	
	COPPER	. 12		16.4		9.58		9.43		11.1		11.3	
	IRON	12800		18100		13900		15400		15800		14100	
	LEAD	7.44	n	7.44	n	8.16		7.44	Ω	8.17		7.44	ח
	MAGNESIUM	0969		9510		2300		7050		8180		6450	
	MANGANESE	303		382		235		262		283		245	
	MERCURY	0.05	n	0.071	-	0.02	Ω	0.053	_	0.062	-	0.05	n
	NICKEL	7.21		11.3		9.81		8.44		9.3		6.71	
	POTASSIUM	3510		6100		3140		3310		4420		2690	
	SILVER	0.803	n	0.803	n	0.803	Ω	0.803	Ω	0.803	n	0.803	ח
	SODIUM	1300		1220		961		339		496		283	
	VANADIUM	16.6		24.3		22.4		23.6		29.4		17.6	
	ZINC	42.1		64.3		37.7		39.2		46.6		37.4	
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́		Y X		ž		Ϋ́Z		ΥN		٧×	
	2,6-DINITROTOLUENE	AA		٧V		NA		٧Z		٧Z		Ž	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

		ARP-	ARP-94-09C	ARP-5	4-10B	ARP-94	-10C	ARP-94-11B	4-11B	ARP-94-11C	-11C	ARP-94	.12R
Group	Analytes	S ft (dup)	(dnp)	3	3 ft	5 ft		3	اع	5 ft		3 ft	
ANIONS	NITRATE	٧X		N A		N A		×		X		Ž	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	n	2.5	Ω	2.5	Ω	2.5		2.5	Ξ
	2,4,6-TRINITROTOLUENE	2	Ω	2	n	2	Ω	7	Ω	7	o D	?	
	HMX	2	n	7	n	7	Ω	7	n	7	Ω	7	
	RDX	1.28	n	1.28	n	1.28	Ω	1.28	Ω	1.28	· =	1.28	=
	TETRYL	2.11	Ω	2.11	Ω	2.11	Ω	2.11	Ω	2.11	'n	2.11	· =
METALS	ALUMINUM	16000		6730		0899		7880		5720		0989	<b>)</b>
	ARSENIC	4.7		4.72		4.09		4.41		5.42		4.97	
	BARIUM	142		72.8		59.6		9.9/		60.2		79.8	
	BERYLLIUM	0.615		0.427	n	0.427	Ω	0.427	n	0.427	Ω	0.427	$\Box$
	CALCIUM	29700		20200		31800		17100		14200		19600	1
	CHROMIUM	91		7.9		9.29		10.7		8.26		9.58	
	COBALT	4.92		3.69		5.34		3.42		2.75		2.94	
	COPPER	11.3		7.16		7.86		5.27		2.67		5.96	
	IRON	15800		10700		13000		10200		9350		9590	
	LEAD	7.44	D	7.44	n	7.44	Ω	7.44	Ω	8.81		7.44	=
	MAGNESIUM	7340		3330		3520		2710		2800		3390	)
	MANGANESE	301		187		146		150		142		21.9	D
	MERCURY	0.05	ח	0.05	Ω	0.05	Ω	0.05	Ω	0.02	Ω	0.126	
	NICKEL	8.54		5.98		89.9		5.68		5.54		5.44	
	POTASSIUM	4270		1520		1310		1950		1460		1710	
	SILVER	0.803	Ω	0.803	Ω	0.803	Ω	0.803	ņ	0.803	n	0.803	Ω
	SODIUM	260		9.96		202		215		145		280	,
	VANADIUM	29.9		14.3		15.3		18.6		13.6		15.4	
	ZINC	42.9		27		31.2		23.8		22.6		20.9	
SEMIVOLATILES	2,4-DINITROTOLUENE	٧X		NA		NA		٧X		٧V		X	
	2 A DINITEDATOR HEND	ATA										:	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Cronn	and the state of t	ARP-94-12C	4-12C	ARP-	ARP-94-13B	ARP-94-13C	4-13C	ARP-94-14B	4-14B	ARP-9	ARP-94-14C	ARP-94-15B	.15B
dronb	Allalytes	C	=	3	=	3	=	3 ft	اح	2	2	3 ft	
ANIONS	NITRATE	N	·	NA		××		Š		Ž		ž	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	n	2.5	Ω	2.5	Ω	2.5	Ω	2.5	
	2,4,6-TRINITROTOLUENE	2	n	7	n	2	Ω	7	n	2	Ω	7	n
	HMX	2	Ω	7	n	7	n	7	n	7	Ω	7	
	RDX	1.28	n	1.28	n	1.28	Ω	1.28	Ω	1.28	ח	1.28	Ò
	TETRYL	2.11	n	2.11	n	2.11	n	2.11	n	2.11	n	2.11	
METALS	ALUMINUM	6340		686	n	5640		686	n	686	n	09/9	)
	ARSENIC	7		5.24		6.14		4.08		5.39		6.44	
	BARIUM	55.8		49.7		53.1		8.86	Ω	8.86	Ω	68.4	
	BERYLLIUM	0.427	n	0.427	Ω	0.427	n	0.427	ח	0.427	n	0.427	ח
	CALCIUM	18400		30900		18200		6420		276	Ω	42000	
	CHROMIUM	8.12		6.7		14.3		7.11		89.9		8.78	
	COBALT	3.26		2.67		3.97		2.92		2.5	Ω	3.51	
	COPPER	7.25		6.23		5.72		4.23		3.8		6.57	
	IRON	11000		8940		12200		8780		8000		10800	
	LEAD	10.6		15.3		7.44	Ω	89.6		7.96		12.6	
	MAGNESIUM	4670		0699		4310		1820		922		8880	
	MANGANESE	141		143		135		21.9	Ω	21.9	Ω	163	
	MERCURY	0.05	n	0.02	n	0.05	n	0.05	Ω	0.05	n	0.05	n
	NICKEL	8.04		4.7		5.88		6.04		3.96		7.22	
	POTASSIUM	1400		. 198	Ω	198	n	198	Ω	198	Ω	1370	
	SILVER	0.803	Ω	0.803	n	0.803	n	0.803	Ω	0.803	Ω	0.803	1
	SODIUM	269		208		980		165		94.7		879	)
	VANADIUM	14		2.51	n	56.9		2.51	Ω	13.9		14.1	
	ZINC	27.2		50.6		56		17.4		3.25	Ω	25.7	
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́		Ϋ́Z		۷X		٧X		٧X		٧X	
	2,6-DINITROTOLUENE	NA NA		ΥN		NA		Ϋ́		×		N	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

		ARP-94-15C	4-15C	ARP-5	ARP-94-16B	ARP-9	4-16C	ARP-94-17B	4-17B	ARP-9	4-17C	ARP-94-18B	-1813
Group	Analytes	5 ft	2	3 ft	2	S	5 ft	3	2	5 ft	2	3 ft	
ANIONS	NITRATE	NA		N N		NA		X Y		Ž		N N	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	Ω	2.5	Ω	2.5	Ω	2.5	Ω	2.5	Ω
	2,4,6-TRINITROTOLUENE	2	Ω	7	n	7	Ω	7	n	7	Ω	2	ר
	HMX	7	Ω	7	n	7	Ω	7	Ω	7	Ω	7	n
	RDX	1.28	n	1.28	Ω	1.28	n	1.28	n	1.28	Ω	1.28	n
	TETRYL	2.11	n	2.11	Ω	2.11	Ω	2.11	n	2.11	Ω	2.11	Þ
METALS	ALUMINUM	686	n	10000		7090		9920		7840		0269	
	ARSENIC	5.31		6.77		7.73		8.46		9		4.64	
	BARIUM	57.8		16		116		115		108		66.2	
	BERYLLIUM	0.427	n	0.427	n	0.427	Ω	0.427	n	0.427	Ω	0.427	n
	CALCIUM	19200		46900		40500		64000		34200		14200	
	CHROMIUM	10.1		12.6		9.12		12.7		9.76		9.84	
	COBALT	3.05		3.41		3.44		3.37		2.79		2.9	
	COPPER	4.98		6.79		8.26		7.06		6.41		5.6	
	IRON	0666		12400		11700		12700		10100		8540	
	LEAD	7.44	n	9.29		12.8		12		7.44	Ω	7.44	ר
	MAGNESIUM	3580		8200		7350		10500		6730		2380	
	MANGANESE	135		193		179		198		140		121	
	MERCURY	0.05	n	0.05	n	0.02	Ω	0.075		0.094		0.05	n
	NICKEL	5.44		8.6		7.91		10.2		8.39		5.06	
	POTASSIUM	198	n	2140		1530		2270		1820		1700	
	SILVER	0.803	Ω	0.803	n	0.803	Ω	0.803	n	0.803	n	0.803	n
	SODIUM	1080		2080		2080		2190		2310		364	
	VANADIUM	18.8		21.2		14.5		19.4		13.1		16.5	
	ZINC	19.5		53		27.6		32.3		21.3		3.25	Ω
SEMIVOLATILES	2,4-DINITROTOLUENE	ΥN		Ϋ́		Ν		××		Ϋ́		٧N	
	2 6. DINITROTOI HENE	YZ		7.7		A 1.4		7.7		:			

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

Group	Analytes	5 ft	) [	AKF-94	ARP-94-19B 3 ft	ARP-94-19C 5 ft	4-19C	ARP-94-20B	.4-20B fr	ARP-94-20C	4-20C	ARP-94-21B	-21B
								,				110	
ANIONS	NITRATE	N A		NA		ΥN		٧X		NA		×z	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	n	2.5	n	2.5	Ω	2.5	Ω	2.5	n
	2,4,6-TRINITROTOLUENE	7	Ω	7	Ω	2	Ω	7	Ω	2	n	7	n
	HMX	7	n	7	n	7	n	7	Ω	2	Ω	7	1
	RDX	1.28	Ω	1.28	Ω	1.28	Ω	1.28	n	1.28	Ω	1.28	n
	TETRYL	2.11	n	2.11	n	2.11	Ω	2.11	Ω	2.11	n	2.11	n
METALS	ALUMINUM	10300		13000		10500		7660		9110		8690	
	ARSENIC	11.1		9.45		9.21		10.1		8.06		3.93	
	BARIUM	105		911		96		84.9		181		81.4	
	BERYLLIUM	0.427	n	0.427	Ω	0.427	Ω	0.427	n	0.427	n	0.427	n
	CALCIUM	20800		81000		34300		20800		9000/9		13800	
	CHROMIUM	12.6		17.3		13		10.3		11.2		11.2	
	COBALT	3.71		3.71		4.09		3.46		3.5		3.49	
	COPPER	7.86		10.4		7.59		6.39		8.41		7.89	
	IRON	14800		14600		12100		11000		12300		10700	
	LEAD	12.4		14.7		10.9		68.6		11.7		8.62	
	MAGNESIUM	4550		10100		6450		5980		10700		4100	
	MANGANESE	220		254		173		121		178		172	
	MERCURY	0.069		0.065		0.395		0.05	Ω	0.05	n	0.077	
	NICKEL	12.4		13.7		10.7		69.6		9.34		6.29	
	POTASSIUM	2080		2940		2240		1510		1800		2640	
	SILVER	0.803	Ω	0.803	Ω	0.803	Ω	0.803	D	0.803	n	0.803	Þ
	SODIUM	1490		1410		1280		3150		2440		1020	
	VANADIUM	23.1		23.5		24.3		18.4		17.4		<u>&amp;</u>	
	ZINC	33.3		48.3		27.9		27.5		28.3		30.2	
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́		×		¥		٧z		NA		ΥN	
	2,6-DINITROTOLUENE	ΥN		Ϋ́		ž		Ν		×z		Y	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Group         Analytes         5 ft           ANIONS         NITRATE         NA           EXPLOSIVES         2,4-DINITROTOLUENE         2,5 U           HMX         1.28 U         2,1 U           HMX         1.28 U         1,28 U           RDX         1.28 U         1,28 U           ARSENIC         4.86         989 U           BARUM         45.8         8           BERYLLIUM         6.427 U         0.427 U           CALCIUM         6.427 U         0.427 U           COBALT         2.76         2.76           COPPER         5.77         119           MAGNESIUM         7.44 U         0.05 U           MARCURY         0.05 U         1           MARCURY         0.05 U         1           MARCURY         0.05 U         1           NICKEL         5.23         POTASSIUM           SODIUM         697           VANADIUM         14.8           ZINC         20.7		<b>ARP-94-21C</b>	-21C	ARP-5	ARP-94-22B	ARP-9	ARP-94-22C	ARP-9	ARP-94-23B	ARP-94-23C	4-23C	ARP-04	24R
VES       2,4-DINITROTOLUENE       2.5         2,4-DINITROTOLUENE       2         HMX       2         RDX       1.28         TETRYL       2.11         ALUMINUM       989         ARSENIC       4.86         BARUIM       6.427         CALCIUM       6.427         CALCIUM       6.427         COBALT       2.76         COPPER       5.77         IRON       9080         LEAD       7.44         MAGNESIUM       2390         MANGANESE       119         MERCURY       0.05         NICKEL       5.23         POTASSIUM       1120         SILVER       697         VANADIUM       14.8         ZINC       20.7	Analytes	5 fi		3 ft	ی	5 6	z.	3	ft	51	ا ا	3 ft	ì
VES       2,4-DINITROTOLUENE       2.5         2,4,6-TRINITROTOLUENE       2         HMX       2         RDX       1.28         TETRYL       2.11         ALUMINUM       989         ARSENIC       4.86         BARUM       6620         CALCIUM       6620         CHROMIUM       7.75         COPPER       5.77         IRON       7.44         MAGNESIUM       2390         MANGANESE       119         MERCURY       0.05         NICKEL       5.23         POTASSIUM       0.803         SODIUM       697         VANADIUM       14.8         ZINC       20.7													
VES         2,4-DINITROTOLUENE         2.5           2,4,6-TRINITROTOLUENE         2           HMX         1.28           RDX         1.28           TETRYL         2.11           ALUMINUM         4.86           BARUM         45.8           BARUM         0.427           CALCIUM         6620           CHROMIUM         7.75           COPPER         5.77           IRON         7.44           MAGNESIUM         2390           MANGANESE         119           MANGANESE         119           MERCURY         0.05           NICKEL         5.23           POTASSIUM         0.803           SODIUM         697           VANADIUM         14.8           ZINC         20.7		Ϋ́		Ν		Y V		X		X		Y	
2,4,6-TRINITROTOLUENE 2  RDX  RDX  1.28  TETRYL  ALUMINUM  ARSENIC  BARUIM  CALCIUM  CALCIUM  CALCIUM  COBALT  COPPER		2.5	Ω	2.5	UR	2.5	UR	2.5	J.	2.5	IIR	2.5	118
HMX  RDX  1.28  TETRYL  ALUMINUM  ARSENIC  BARUM  BARUM  CALCIUM  CALCIUM  COBALT  COPPER  COP	TRINITROTOLUENE	7	n	7	UR	7	UR	7	UR	7	UR	2	i i
TETRYL		7	n	7	JR	7	UR UR	7	JR.	2	118	, ,	i a
TETRYL ALUMINUM ARSENIC ARSENIC BARUM BARUM 6620 CALCIUM CALCIUM 6620 CHROMIUM 7.75 COBALT COPPER COPPER 1.75 COPPER COPPER 1.9 MAGNESIUM MAGNESIUM MANGANESE NICKEL SCOBIUM SCOBIUM 697 7.44 MAGNESIUM 1120 SILVER SODIUM 14.8 ZINC 2.11 989		1.28	Ω	1.28	UR	1.28	UR	1.28	UR.	1 28	II E	1 28	an an
ALUMINUM ARSENIC ARSENIC BARUM BARUM 65.8 BERYLLIUM CALCIUM 6620 CHROMIUM 7.75 COBALT COPPER COPPER 1.75 COPPER COPPER 1.74 RON LEAD MAGNESIUM MAGNESIUM MANGANESE NICKEL S.23 POTASSIUM SILVER SODIUM 697 VANADIUM 14.8 ZINC 20.7		2.11	Ω	2.11	UR	2.11	UR	2.11	UR	2.11	E E	2 11	ž E
SINIC 4.86  UM 45.8  **LLIUM 0.427  SIUM 6620  MIT 7.75  MLT 2.76  SIUM 9080  OANESI 2390  GANESE 119  CURY 0.05  SIUM 0.803  MM 697  VOIUM 14.8		686	Ω	6210		705	Ω	5660		5250		0630	5
UM 45.8  'LLIUM 0.427  IUM 6620  MUT 7.75  MLT 2.76  ER 5.77  9080  0 7.44  NESTUM 2390  GANESE 119  CURY 0.05  EL 5.23  SSIUM 0.803  WM 697  UM 697  UM 14.8		4.86		10.6		90.9		4.46		19.2		5.41	
TLIUM 0.427  SIUM 6620  MIUM 6620  MLT 2.76  ER 5.77  9080  0 7.44  NESIUM 2390  GANESE 119  CURY 0.05  EL 5.23  SSIUM 0.803  WM 697  VDIUM 14.8		45.8		86.4		32.4		49.9		148		73.8	
JUM 6620  JMIUM 7.75  ALT 2.76  ER 5.77  9080  0 7.44  NESIUM 2390  GANESE 119  CURY 0.05  EL 5.23  SSIUM 0.803  WM 697  KDIUM 14.8		.427	Ω	0.427	Ω	0.427	Ω	0.427	Ω	0.427	1	0.61	
NLT 2.75 NLT 2.76 ER 5.77 ER 5.77 9080 0 7.44 NESIUM 2390 GANESE 119 CURY 0.05 EL 5.23 SSIUM 1120 ER 697 UM 697 UM 697 UM 20.7		2620		15200		17800		11700		45900		26400	
NLT 2.76  ER 5.77  9080  0 7.44  NESIUM 2390  GANESE 119  CURY 0.05  EL 5.23  SSIUM 1120  3R 697  UM 697  UM 697  UM 2017	UM	7.75		9.57		1.18	n	8.69		8.57		12.8	
ER 5.77 9080 7.44 NESIUM 2390 GANESE 119 CURY 0.05 EL 5.23 SSIUM 1120 ER 697 UM 697 UM 20.7		2.76		3.84		2.5	Ω	2.78		3.85		4 35	
9080  7.44  NESIUM 2390  GANESE 119  CURY 0.05  EL 5.23  SSIUM 1120  SR 697  UM 697  KDIUM 14.8	ER	5.77		8.6		3.58		6.25		6.72		12.2	
7.44 NESIUM 2390 GANESE 119 CURY 0.05 EL 5.23 SSIUM 1120 ER 697 UM 697 KDIUM 14.8		9080		11800		5820		8760		12800		16900	
NESTUM GANESE CURY EL SSIUM SRIUM OM NDIUM		7.44	n	8.61		7.44	Ω	7.44	n	8.95		13.6	
GANESE CURY EL SSIUM SSIUM OM NDIUM		2390		3560		1700		3010		6340		7680	
CURY EL SSIUM SRIUM SR UM NDIUM		119		132		99.9		108		262		163	
EL SSIUM SR SR UM NDIUM	RY	0.05	n	0.05	Ω	0.077		0.05	D	0.085		0.05	n
SSIUM BR UM NDIUM		5.23		10.2		3.12	_	4.53	-	10.9	ſ	14.1	· <b>-</b>
ar UM ADIUM	IUM	1120		1280		193	D	1410		193	n	1690	•
UM ADIUM		.803	n	0.803	n	0.803	Þ	0.803	Ω	0.803		0.803	=
NDIUM		269		1580		432		731		1280	,	2500	)
	NDIUM	14.8		18.8		8.89		15		17.7		23.6	•
		20.7		25.5		2.72	n	19		28.6		36.2	
		۲×		Ϋ́		NA		٧X		×		Ž	
2,6-DINITROTOLUENE NA		Ϋ́		٧V		٧		٧V		N.		Ž	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

		ARP-9	4-24C	ARP-	ARP-94-25B	ARP-9	4-25C	ARP-9	4-26B	ARP-9	4-26C	ARP-94	-27B
Group	Analytes	5 ft	2	3	3 ft	3	5 ft	3	3 ft	5 ft	ايع	3 ft	
ANIONS	NITRATE	NA		X		N		N		AN		N	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	UR	2.5	UR	2.5	UR	2.5	Ω	2.5	n	2.5	n
	2,4,6-TRINITROTOLUENE	7	UR	7	UR	2	UR	7	Ω	7	n	7	ח
	HMX	7	UR	2	UR	7	UR	7	Ω	7	Ω	7	n
	RDX	1.28	UR	1.28	UR	1.28	UR	1.28	Ω	1.28	Ω	1.28	n
	TETRYL	2.11	UR UR	2.11	UR	2.11	UR	2.11	Ω	2.11	Ω	2.11	ח
METALS	ALUMINUM	6330		7000		8820		4360		705	n	4400	
	ARSENIC	6.97		4.66		4.68		9.64		6.59		3.98	
	BARIUM	83.9		,78.1		95.5		81.7		63.3		64.1	
	BERYLLIUM	0.427	Ω	0.427	n	0.503		0.427	Ω	0.427	n	0.427	Ω
	CALCIUM	43400		11400		27400		57000		27900		18100	
	CHROMIUM	9.81		8.89		10.7		99.9		7.89		5.99	
	COBALT	4.09		2.88		4.1		3.16		2.95		2.5	n
	COPPER	10.1		13		17		6.29		4.59		5.12	
	IRON	14800		11000		12900		10700		8110		7950	
	LEAD	13		10.5		11.7		11.1		7.44	n	7.44	n
	MAGNESIUM	7770		4510		5250		10600		3120		2660	
	MANGANESE	135		245		223		183		68		146	
	MERCURY	0.05	n	0.05	n	0.02	Ω	0.064		0.02	Ω	0.02	Ω
	NICKEL	8.78	-	9.9	_	8.55	ſ	8.33	_	4.31	_	4.41	ſ
	POTASSIUM	1150		2540		2720		193	Ω	193	Ω	1440	
	SILVER	0.803	Ω	0.803	Ω	0.803	Ω	0.803	n	0.803	n	0.803	D
	SODIUM	1990		138		129		1390		1010		103	
	VANADIUM	19.6		13.6		17.1		13.7		19.7		9.53	
	ZINC	34		36.8		36.8		27.1		16.7		20.6	
SEMIVOLATILES	2,4-DINITROTOLUENE	YZ Y		Ϋ́		Ϋ́		NA		Ν		NA	
	2 6-DINITROTOLLIENE	NA		Z		Z		V.V					

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

Group	Analytes	ARP-94-27C 5 ft	1-27C t	ARP-94-28B 3 ft	4-28B ft	ARP-94-28C 5 ft	1-28C	ARP-94-29B	4-29B	ARP-94-29B	4-29B	ARP-94-29C	-29C
										7 11 7	dan		
ANIONS	NITRATE	NA		NA		AN		×		×		Ϋ́	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	Ω	2.5	Ω	2.5	n	2.5	n	2.5	n
	2,4,6-TRINITROTOLUENE	2	n	2	Ω	7	Ω	7	n	7	Ω	7	ב
	HMX	. 2	Þ	7	n	7	þ	7	Ω	7	n	7	Ω
	RDX	1.28	n	1.28	Ω	1.28	n	1.28	n	1.28	Ω	1.28	Ω
	TETRYL	2.11	n	2.11	Ω	2.11	Ω	2.11	Ω	2.11	n	2.11	n
METALS	ALUMINUM	5160		9610		10800		8980		9610		3770	
	ARSENIC	3.87		5.07		4.27		4.28		4.08		5.06	
	BARIUM	51.9		,89.1		98.6		6.06		87.4		36.4	
	BERYLLIUM	0.427	D	0.427	Ω	0.427	Ω	0.427	D	0.427	Ω	0.427	D
	CALCIUM	11000		7860		17400		25900		24500		11200	
	CHROMIUM	8.77		12.7		13.4		10.9		11.6		1.18	n
	COBALT	3.11		3.7		3.6		3.84		3.45		2.5	D
	COPPER	5.59		14.8		8.43		8.01		7.45		4.6	
	IRON	8820		12600		12300		11800		11300		6150	
	LEAD	7.44	n	14.1		8.02		7.44	Ω	7.44	Ω	7.44	n
	MAGNESIUM	2210		4470		4750		5050		4630		2410	
-	MANGANESE	124		260		208		202		179		15.2	n
	MERCURY	0.09		0.05	Ω	0.072		0.05	Ω	0.05	Ω	0.05	n
	NICKEL	4.53	_	8.02	_	7.2	-	8.7	ı	8.04	_	3.76	-
	POTASSIUM	1250		2920		3300		2810		2890		1030	
	SILVER	0.803	Ω	0.803	Ω	0.803	Ω	0.803	n	0.803	Ω	0.803	n
	SODIUM	142		172		235		316		349		292	
	VANADIUM	14.6		18.2		8.02		16.9		18		9.58	
	ZINC	20.1		37.1		35.3		30.5		27		2.72	Ω
SEMIVOLATILES	2,4-DINITROTOLUENE	٧X		۲×		Ϋ́		Ϋ́		Ϋ́		٧N	
	2,6-DINITROTOLUENE	NA		NA		ΥZ		۷		Ϋ́		Z	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

		ARP-9	1-29C	ARP-9	ARP-94-30B	ARP-9	4-30C	ARP-9	4-31B	ARP-9	4-31C	ARP-94	-32B
Group	Analytes	5 ft (dup)	lup)	3 17	2	5 ft	2	3 ft	ي	5 ft	ايع	3 ft	
ANIONS	NITRATE	X		X		٧×		Ϋ́Z		Ž		N V	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	n	2.5	Ω	2.5	n	2.5	n	2.5	Ω	2.5	n
	2,4,6-TRINITROTOLUENE	2	n	7	Ω	7	Ω	7	Ω	7	Ω	7	Ω
	HMX	2	n	7	n	7	Ω	7	Ω	7	Ω	7	
	RDX	1.28	Þ	1.28	n	1.28	Ω	1.28	n	1.28	Ω	1.28	Ω
	TETRYL	2.11	Þ	2.11	n	2.11	Ω	2.11	n	2.11	Ω	2.11	D
METALS	ALUMINUM	5730		10500		9920		4890		705	Ω	6830	
	ARSENIC	4.79		4.52		10.5		8.11		4.27		3.45	-
	BARIUM	45.5		,84.3		113		128		5.7	n	72.8	
	BERYLLIUM	0.427	n	0.427	n	0.427	Ω	0.427	n	0.427	Ω	0.427	n
	CALCIUM	10700		8660		00009		34600		24300		14900	
	CHROMIUM	8.19		14.7		12.6		7.59		9.94		9.91	
	COBALT	2.5	n	3.94		3.72		4.23		2.5	n	2.72	
	COPPER	7.36		8.3		6.33		7.73		4.74		4.92	
	IRON	0906		13300		12000		11800		8850		9650	
	LEAD	7.44	n	7.44	Ω	=		10.7		7.44	Ω	7.44	n
	MAGNESIUM	2970		4170		6780		06/9		3770		2830	
	MANGANESE	88.3		182		112		181		96.4		160	
	MERCURY	0.05	n	0.063		0.058		0.05	Ω	0.05	Ŋ	0.02	n
	NICKEL	3.87	_	8.97	_	8.04	_	8. 8.	ſ	4.74	-	5.39	
	POTASSIUM	1420		2950		2350		972		193	Ω	1780	
	SILVER	0.803	n	0.803	Ω	0.803	Ω	0.803	n	0.803	n	0.803	Ω
	SODIUM	379		462		1250		2840		682		142	
	VANADIUM	15.1		21.3		18.7		11.3		15.5		16.4	
	ZINC	20.1		31.7		27.5		28.2		16.2		25.4	
SEMIVOLATILES	2,4-DINITROTOLUENE	YZ Y		Ν		Ϋ́		×		Ν		Ϋ́N	
	2.6-DINITROTOLUENE	X		Z		Z		Z		Ž		ATA	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

		ARP-94-32C	-32C	ARP-94-33B	4-33B	<b>ARP-94-33C</b>	4-33C	ARP-94-34B	4-34B	ARP-94-34C	4-34C	ARP-94-35B	-35B
Group	Analytes	5 ft		3 ft	ايع	S	یے	3 ft	یے	5 ft	اير	3 17	
ANIONS	NITRATE	NA		Ν		Ϋ́		Y V		Ϋ́		ΥN	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	Ω	2.5	n	2.5	Ω	2.5	Ω	2.5	n
	2,4,6-TRINITROTOLUENE	2	n	7	Ω	7	Ω	7	ם	7	D	7	ח
	HMX	2	n	7	n	7	n	7	Ω	7	Ω	7	Þ
	RDX	1.28	n	1.28	Ω	1.28	Ω	1.28	Ω	1.28	Ω	1.28	n
	TETRYL	2.11	n	2.11	n	2.11	Ω	2.11	Ω	2.11	Ω	2.11	ח
METALS	ALUMINUM	4950		8370		5010		896	Ω	7150		5050	
	ARSENIC	2.93	ī	6.02	-	6.33	ſ	3.67	J	5.78	_	4.63	_
	BARIUM	. 9.56	n	.72.8		9.56	n	61.1		9.56	n	65.5	
	BERYLLIUM	0.427	n	0.427	D	0.427	n	0.427	Ω	0.427	n	0.427	ח
	CALCIUM	4740		19000		23000		11700		7570		21900	
	CHROMIUM	10.5		12.2		10.5		8.22		13.8		6.99	
	COBALT	2.85		3.94		3.31		3.21		4.12		2.79	
	COPPER	4.51		6.55		4.79		5.45		5.04		4.47	
	IRON	9120		12100		10400		9300		12100		8710	
	LEAD	7.44	n	11.1		7.44	Ω	7.44	Ω	8.95		7.44	ח
	MAGNESIUM	1720		5270		4580		2470		2790		3200	
	MANGANESE	149		150		118		133		135		132	
	MERCURY	0.05	n	0.07		0.05	Ω	0.05	Ω	0.063		0.05	n
	NICKEL	4.32		8.48		5.76		4.84	•	6.39		4.06	
	POTASSIUM	1060		2040		1150		1280		1460		1410	
	SILVER	0.803	n	0.803	n	0.803	Ω	0.803	Ω	0.803	Ω	0.803	n
	SODIUM	84.4		878		789		151		299		109	
	VANADIUM	2.99	n	19.3		19.1		2.99	Ω	23.6		2.99	n
	ZINC	19.9		22		20.7		20.3		23.6		20.2	
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́N		٧X		Ν		Ϋ́N		ΥN		Ϋ́	
	2 A_DINITIPOTOT LIENE	NA		V.V.		YN		YN		Y.V		V.V	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

ζ	•	ARP.	ARP-94-35C	ARP-	ARP-94-36B	ARP-9	ARP-94-36C	ARP-9	ARP-94-37B	ARP-94-37C	4-37C	ARP-94-38B	-38B
Group	Analytes		5 ft	3	3 ft	5	اي	3	T.	5	2	3 ft	
ANIONS	NITRATE	NA		X		Š		Z		Ϋ́		Ą	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	n	2.5	Ω	2.5	n	2.5	Ω	2.5	
	2,4,6-TRINITROTOLUENE	2	Ω	2	n	7	Ω	7	Ω	7	Ω	7	Þ
	HMX	2	n	7	n	7	n	7	Ω	7	Ω	7	₽
	RDX	1.28	n	1.28	n	1.28	Ω	1.28	Ω	1.28	Ω	1.28	
	TETRYL	2.11	Ω	2.11	Ω	2.11	n	2.11	n	2.11	n	2.11	ĵ
METALS	ALUMINUM	5720		896	n	896	D	9090		896	Ω	896	
	ARSENIC	3.89	_	5.45	-	01	<b>-</b>	12.3	_	11.2	ſ	7.3	-
	BARIUM	71.1		61.3		56.4		91.7		56.9		19	
	BERYLLIUM	0.427	D	0.427	Ω	0.427	n	0.427	n	0.427	n	0.427	n
	CALCIUM	13800		28300		26600		21700		27300		25200	
	CHROMIUM	8.59		6.84		6.85		8.64		6.16		4.72	
	COBALT	3.02		3.82		3.44		3.95		4.03		3.11	
	COPPER	4.71		6.14		11.8		6.3		6.62		4.53	
	IRON	9520		10200		10500		11700		10400		7230	
	LEAD	7.44	n	8.57		11.4		7.44	Ω	10.8		7.44	
	MAGNESIUM	2820		6100		4850		5440		4700		4240	٠
	MANGANESE	131		163		109		159		112		132	
	MERCURY	0.078		0.061	_	0.168	_	0.05	Ω	0.085	_	0.059	_
	NICKEL	3.72		7.94		8.65	,	8.14		7.78		3.9	
	POTASSIUM	1530		785		155	n	1380		155	Ω	155	D
	SILVER	0.803	D	0.803	n	0.803	Ω	0.803	Ω	0.803	Ω	0.803	n
	SODIUM	158		484		557		133		67.3		317	
	VANADIUM	2.99	D	2.99	D	2.99	Ω	18.5		2.99	Ω	2.99	n
	ZINC	21.9		24		29.5		22.9		25.1		3.53	n
SEMIVOLATILES	2,4-DINITROTOLUENE	٧X		Ϋ́N		Ϋ́		Ν		٧X		٧X	
	2,6-DINITROTOLUENE	NA		Ν		ΥN		Ϋ́		X		2	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

		ARP-9	4-38C	ARP-	<b>24-39B</b>	ARP-9	4-39C	ARP-9	4-40B	ARP-9	4-40C	ARP-94	418
Group	Analytes	5	5 ft	3	3 ft	5	5 ft	3 ft	2	ĸ	5 ft	3 ft	
ANIONS	NITRATE	N		X		V		X		X		X	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	Ω	2.5	n	2.5	Ω	2.5	Ω	2.5	Ω
	2,4,6-TRINITROTOLUENE	2	n	7	Ω	7	Ω	7	n	7	Ω	2	n
	HMX	7	n	7	Ω	7	Ω	7	Ω	7	Ω	2	n
	RDX	1.28	ח	1.28	n	1.28	n	1.28	n	1.28	Ω	1.28	)
	TETRYL	2.11	n	2.11	n	2.11	Ω	2.11	Ω	2.11	n	2.11	D
METALS	ALUMINUM	896	n	896	Ω	896	n	896	n	896	Ω	896	ח
	ARSENIC	69.6	_	3.33	_	5.06	-	3.83	J	3.91	_	4.58	_
	BARIUM	77.5		9.56	n	9.56	Ω	49		50.7		9.56	n
	BERYLLIUM	0.427	n	0.427	Ω	0.427	Ω	0.427	n	0.427	n	0.427	Ω
	CALCIUM	37300		13200		18900		8640		18400		20300	
	CHROMIUM	7.05		5.6		2.67		5.75		5.26		4.81	
	COBALT	3.87		2.5	Ω	2.5	Ω	2.5	Ω	2.5	n	2.5	D
	COPPER	6.07		3.56		4.75		4.53		4.53		7.28	
	IRON	0896		1410	Ω	1410	Ω	1410	Ω	8440		8370	
	LEAD	7.98		7.44	n	7.44	Ω	7.44	n	7.44	Ω	7.44	n
	MAGNESIUM	5530		1850		1730		2340		2600		3370	
	MANGANESE	151		21.8	Ω	111		21.8	Ω	21.8	Ω	114	
	MERCURY	0.061	<b>-</b>	0.02	n	0.084	-	0.02	Ω	0.02	n	0.02	n
	NICKEL	6.21		2.74	Ω	3.79		3.26		4.19		3.95	
	POTASSIUM	155	Ω	155	Ω	155	Ω	974		892		818	
	SILVER	0.803	n	0.803	N	0.803	Ω	0.803	Ω	0.803	Ω	0.803	n
	SODIUM	153		279		298		231		387		643	
	VANADIUM	2.99	Ω	2.99	D	2.99	Ω	2.99	Ω	2.99	n	2.99	Ω
	ZINC	23.1		3.53	n	3.53	n	3.53	Ω	19.1		18.9	
SEMIVOLATILES	2,4-DINITROTOLUENE	Y V V		Ϋ́		Ϋ́		Ϋ́		٧X		٧×	
	2 A DINITIDATOI LIGNE	< Z		*		*							

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

		ARP-94-41C	141C	ARP-	4-42B	ARP-9	4-42C	ARP-9	4-43B	ARP-9	4-43C	ARP-94	44B
Group	Analytes	5.1		3	3 ft	5 ft	اے	3 ft	ي	5 ft	2	3 ft	
ANIONS	NITRATE	Ϋ́		X A		Ν	•	٧X		X		X	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	n	2.5	Ω	2.5	n	2.5	Ω	2.5	D
	2,4,6-TRINITROTOLUENE	2	Ω	7	Ω	2	Ω	7	Ω	2	Ω	7	Ω
	HMX	7	Ω	7	n	7	n	7	Ω	7	n	7	n
	RDX	1.28	Ω	1.28	n	1.28	n	1.28	Ω	1.28	Ω	1.28	C
	TETRYL	2.11	n	2.11	n	2.11	Ω	2.11	n	2.11	Ω	2.11	n
METALS	ALUMINUM	896	n	896	n	896	D	896	Ω	896	n	11300	
	ARSENIC	6.07	<b>-</b>	5.48	-	4.75	-	10.6	ŗ	2.66	-	5.71	-
	BARIUM	9.56	n	9.56	Ω	9.56	n	9.56	Ω	9.56	n	143	
	BERYLLIUM	0.427	Ω	0.427	D	0.427	D	0.427	n	0.427	n	0.628	
	CALCIUM	6830		12500		18800		28700		28200		44400	
	CHROMIUM	6.45		4.27		4.01		æ		3.07		11.6	
	COBALT	2.85		2.5	Ω	2.9		2.5	n	2.5	Ω	6.03	
	COPPER	5.99		4.27		3.86		3.83		4.24		9.51	
	IRON	0806		1410	n	1410	n	7730		7520		15400	
	LEAD	7.44	n	7.44	n	7.44	n	7.44	n	7.44	n	15	
	MAGNESIUM	2050		1660		2000		3110		3650		6840	
	MANGANESE	21.8	Ω	21.8	Ω	21.8	Ω	21.8	n	21.8	n	244	
	MERCURY	0.05	Ω	0.05	n	0.029	-	0.02	Ω	0.054	ſ	0.058	_
	NICKEL	4.41		2.74	n	5.59		4.95		4.07		10.7	
-	POTASSIUM	985		155	n	155	n	155	Ω	155	n	3430	
	SILVER	0.803	n	0.803	n	0.803	Ω	0.803	n	0.803	n	0.803	n
	SODIUM	730		95.7		116		156		218		1790	
	VANADIUM	2.99	n	2.99	n	2.99	Ω	2.99	n	2.99	Ω	19.1	
	ZINC	19.3		3.53	n	3.53	n	3.53	Ω	3.53	Ω	37.9	
SEMIVOLATILES	2,4-DINITROTOLUENE	YZ Y		NA		Ν		Ϋ́N		۲×		N	
	2,6-DINITROTOLUENE	VN		Ϋ́		NA		Ϋ́		Ϋ́Z		Y.	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

		ARP-9	ARP-94-44C	ARP-	4-45B	ARP-	74-45C	ARP-9	4-46B	ARP-9	4-46C	ARP-94	-47B
Group	Analytes	Sft	2	3	3 ft	S	5 ft	3	3 ft	S	S ft	3 ft	
ANIONS	NITRATE	NA		NA		NA		Ϋ́		X		Z	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	D	2.5	Ω	2.5	n	2.5	Ω	2.5	n
	2,4,6-TRINITROTOLUENE	2	Ω	7	n	7	Ω	7	Ω	7	Ω	7	D
	HMX	7	D	7	n	7	n	7	Ω	7	Ω	7	ח
	RDX	1.28	D	1.28	Ω	1.28	Ω	1.28	Ω	1.42		1.28	n
	TETRYL	2.11	Þ	2.11	n	2.11	n	2.11	n	2.11	n	2.11	n
METALS	ALUMINUM	7810		8970		1060	Ω	1060	ם	1060	Ω	1060	n
	ARSENIC	4.45	_	10.4		19.5		3.52		3.03		2.87	
	BARIUM	9.62		92.3		9	Ω	2	D	51		01	D
	BERYLLIUM	0.427	n	0.427	Ω	0.427	Ω	0.427	Ω	0.427	Ω	0.427	n
	CALCIUM	21900		27900		32900		12000		32400		13800	
	CHROMIUM	7.6		9.87		1.63	Ω	1.63	Ω	1.63	n	1.63	Ω
4	COBALT	3.63		3.62		7.11		3.55		3.07		2.77	
	COPPER	8.01		7.45		12.6		5.54		4.32		4.06	
	IRON	12600		12700		22700		1630	Ω	1630	n	1630	1
	LEAD	7.44	n	7.44	Ω	12.1		7.44	n	7.44	Ω	7.44	D
	MAGNESIUM	4300		5160		2600		1900		4290		2580	
	MANGANESE	187		173		26.7	Ω	26.7	Ω	26.7	n	26.7	ב
	MERCURY	0.05	Ω	0.05	n	0.05	Ω	0.05	Ω	90.0	-	0.05	n
	NICKEL	7.52		7.88		9.75		4.95		4.43		3.68	
	POTASSIUM	2310		2850		569	n	569	Ω	569	n	569	ח
	SILVER	0.803	ם	0.803	n	0.803	Ω	0.803	D	0.803	Ω	0.803	ח
	SODIUM	089		413		312		388		280		265	
	VANADIUM	15.8		16.5		3.29	Ω	16.5		3.29	n	3.29	n
	ZINC	25.4		32.7		24.1		4.59	Ω	4.59	n	4.59	ר
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́Z		NA		٧N		NA		N		Ν	
	2 6-DINITROTOI LIENE	Z		Y.V		Z		V N		VIV		N.Y.	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

į	,	ARP-5	ARP-94-47C	ARP-	ARP-94-48B	ARP-9	ARP-94-48C	ARP-94-49B	4-49B	ARP-9	4-49B	ARP-94-49C	49C
Group	Analytes	R.	5 ft	3	2	5 f	2	3	ſţ	3 ft (	3 ft (dup)	5 ft	
ANIONS	NITRATE	٧ ٧		٧X		YN V		ΥN		YZ.		X	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	n	2.5	n	2.5	Ω	2.5	Ω	2.5	Ω	2.5	Þ
	2,4,6-TRINITROTOLUENE	2	n	7	D	7	n	7	n	7	n	7	n
	HMX	7	n	7	n	7	n	7	D	7	Ω	7	Ξ
	RDX	1.28	Ω	1.69		1.28	Ω	1.28	n	1.28	D	1.28	) D
	TETRYL	2.11	Ω	2.11	n	2.11	n	2.11	Ω	2.11	n	2.11	Þ
METALS	ALUMINUM	1060	n	5320		1060	Ω	1060	n	1060	Ω	1060	D
	ARSENIC	4.25		3.75		3.65		15.9		8.8		6.74	
	BARIUM	01	n	۵,	Ω	10	Ω	10	n	01	n	01	n
	BERYLLIUM	0.427	D	0.427	Ω	0.427	׆	0.427	Ω	0.427	Ω	0.427	n
	CALCIUM	13800		7820		12300		34700		28300		45300	
	CHROMIUM	8.46		8.71		1.63	n	1.63	n	8.89		1.63	
	COBALT	3.57		2.93		2.81		4.05		4.06		2.5	ח
	COPPER	4.7		4.85		4.85		5.26		6.97		2.84	ר
	IRON	1630	D	1630	n	1630	Ω	13500		15300		1630	ם ח
	LEAD	7.44	Ω	7.44	n	7.44	n	12.4		9.48		7.44	ח
	MAGNESIUM	2510		2080		2130		7340		3810		4470	)
	MANGANESE	26.7	Ω	26.7	n	7.97	Ω	7.97	n	26.7	n	26.7	Ω
	MERCURY	0.058	-	0.057	_	0.05	Ω	0.02	Ω	0.05	n	0.02	Ω
	NICKEL	3.68		5.21		3.67		90.9		7.59		2.74	Ω
	POTASSIUM	1380		1490		569	n	569	Ω	569	n	569	D
	SILVER	0.803	Ω	0.803	n	0.803	Ω	0.803	n	0.803	Ω	0.803	Þ
	SODIUM	392		375		469		116		159		9.66	
	VANADIUM	17		3.29	Ω	3.29	n	3.29	Ω	3.29	Ω	3.29	ח
	ZINC	4.59	D	4.59	D	4.59	n	4.59	n	4.59	Ω	4.59	Ω
SEMIVOLATILES	2,4-DINITROTOLUENE	Ϋ́Z		Ϋ́Z		Ϋ́		Ϋ́		ž		VV	
	2,6-DINITROTOLUENE	VV		Ϋ́N		NA		NA		٧X		Ϋ́	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

		ARP-9	4-49C	ARP-9	ARP-94-50B	ARP-9	ARP-94-50C	ARP-9	4-51B	ARP-9	4-51C	ARP-94	-52B
Group	Analytes	5 ft (	5 ft (dup)	3 11	2	5 ft	The state of the s	3 ft	2	5 ft	=	3 ft	
ANIONS	NITRATE	AN		NA		N		Ϋ́		NA		NA	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	n	2.5	n	2.5	D	2.5	n	2.5	Ω	2.5	Ω
	2,4,6-TRINITROTOLUENE	2	Ω	2	n	7	Ω	7	Ω	7	Ω	7	D
	HMX	2	n	7	n	7	n	7	Ω	7	Ω	2	ח
	RDX	1.28	n	1.28	Ω	1.28	n	1.28	n	1.28	n	1.72	
	TETRYL	2.11	Ω	2.11	Ω	2.11	n	2.11	Ω	2.11	Ω	2.11	n
METALS	ALUMINUM	1060	n	1060	Ω	1060	Ω	1060	n	1060	Ω	9910	
	ARSENIC	3.72		2.5	Ω	2.5	n	3.75		8.09		3.79	
	BARIUM	10	n	2	n	10	Ω	10	n	10	Ω	88.1	
	BERYLLIUM	0.427	n	0.427	Ω	0.427	n	0.427	n	0.427	n	0.427	D
	CALCIUM	36300		36000		47800		34200		46100		17400	
	CHROMIUM	1.63	n	1.63	Ω	1.63	n	1.63	Ω	1.63	n	11.4	
	COBALT	2.5	n	2.5	Ω	2.5	Ω	2.5	Ω	2.5	Ω	3.76	
	COPPER	3.37		4.31		3.59		16.5		3.7		9.18	
	IRON	1630	n	1630	Ω	1630	Ω	9020		1630	Ω	11600	
	LEAD	7.44	n	7.44	n	7.44	Ω	7.44	ລ	7.44	n	7.44	n
	MAGNESIUM	3690		1700		2840		4160		2730		4700	
	MANGANESE	26.7	Ω	26.7	Ω	26.7	Ω	26.7	n	26.7	n	197	
	MERCURY	0.05	D	0.05	n	0.02	Ω	0.02	Ω	0.05	Ω	0.052	_
	NICKEL	3.39		4.09		3.93		6.94		4.79		7.17	
	POTASSIUM	569	Þ	569	n	569	D	569	n	569	Ω	3200	
	SILVER	0.803	Ω	0.803	Ω	0.803	Ω	0.803	Ω	0.803	n	0.803	D
	SODIUM	131		217		158		75.3		96.1		544	
	VANADIUM	3.29	Ω	3.29	n	3.29	n	3.29	Ω	3.29	Ω	18.5	
	ZINC	4.59	n	4.59	n	4.59	Ω	4.59	n	4.59	n	33.2	
SEMIVOLATILES	2,4-DINITROTOLUENE	٧X		ΥN		Ϋ́		٧X		٧X		۷N	
	2,6-DINITROTOLUENE	NA		٧N		ž		Ϋ́Z		×z		×z	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

ţ		ARP-94-52C	ARP-94-53B	53B	ARP-94-53C	53C	ARP-94-54B	1-54B	ARP-94-54C	-54C	ARP-94-55B	.55B
Group	Analytes	5 ft	3 ft		5 ft		3 f		5 ft		3 ft	
ANIONS	NITRATE	٧X	NA VA		Ϋ́		Š		Ϋ́		Ϋ́Z	
EXPLOSIVES	2,4-DINITROTOLUENE	2.5 U	2.5	Ω	2.5	Ω	2.5	Ω	2.5	Ω	2.5	ם
	2,4,6-TRINITROTOLUENE	2 U	2	Ω	2	Ω	2	Ω	7	n	7	ם
	HMX	2 U	2	Ω	7	Ω	7	n	7	n	7	n
	RDX	1.28 U	1.28	n	1.28	Ω	1.28	n	1.28	Ω	1.28	ם
	TETRYL	2.11 U	2.11	Ω	2.11	Ω	2.11	Ω	2.11	Ω	2.11	D
METALS	ALUMINUM	7260	1060	Ω	5440		5740		1060	Þ	7250	
	ARSENIC	3.93	3.61		3.44		5.9		3.5		3.3	
	BARIUM	9.89	01.	Ω	01	Ω	8.09		10	n	73.2	
	BERYLLIUM	0.427 U	0.427	Ω	0.427	n	0.427	Ω	0.427	Ω	0.427	Þ
	CALCIUM	13100	8720		15800		34600		37400		17400	
	CHROMIUM	9.53	1.63	Ω	8.19		1.63	n	1.63	Ω	8.87	
	COBALT	3.35	2.5	n	2.5	Ω	4.37		4.2		2.81	
	COPPER	9.7	5.73		5.04		6.58		7.81		5.75	
	IRON	9940	1630	n	9550		12500		11100		9610	
	LEAD	8.2	7.44	Ω	7.44	Ω	7.44	Ω	7.44	n	7.44	Ω
	MAGNESIUM	3580	1850		3100		4650		3510		3160	
	MANGANESE	150	26.7	Ω	26.7	Ω	138		26.7	Ω	149	
	MERCURY	0.05 U	0.05	Ω	0.05	n	0.05	Ω	0.05	Ω	0.05	Ω
	NICKEL	5.89	4.3		5.36		90.6		7.12		5.11	
	POTASSIUM	2160	569	n	269	Ω	1530		269	n	2000	
	SILVER	0.803 U	0.803	Ω	0.803	Ω	0.803	Ω	0.803	Ω	0.803	D
	SODIUM	621	168		399		251		123		175	
	VANADIUM	18.5	3.29	n	3.29	Ω	3.29	Ω	3.29	Ω	3.29	D
	ZINC	24.2	4.59	D	4.59	n	27		4.59	Ω	25.4	
SEMIVOLATILES	2,4-DINITROTOLUENE	Ν	Ν		۲ ۲		٧		٧Z		Ϋ́Z	
	2,6-DINITROTOLUENE	AA	A		AN		Ϋ́N		Ϋ́Z		YZ	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

		ARP-94-55C	.55C	ARP-	<b>24-56B</b>	ARP-5	ARP-94-56C	ARP-9	4-57B	ARP-9	4-57C	ARP-94-58B	1-58B
Group	Analytes	Sft		3	3 ft	5 ft	E.	3	3 ft	5	5 ft	3.6	
ANIONS	NITRATE	N A		N.		X		٧X		X		Ž	
EXPLOSIVES	2,4-DINITROTOLUENE	٧X		2.5	Ω	2.5	n	2.5	Ω	2.5	n	2.5	Ω
	2,4,6-TRINITROTOLUENE	NA		7	n	7	Ω	7	n	7	n	7	n
	HMX	NA		7	Ω	7	n	7	n	7	Ω	7	D
	RDX	NA		3.03		2.09		1.28	Ω	1.28	n	1.28	n
	TETRYL	ΥN		2.11	Ω	2.11	D	2.11	Ω	2.11	Ω	2.11	
METALS	ALUMINUM	7060		1060	Ω	1060	n	0899		5500		7350	
	ARSENIC	4.73		3.46		4.4		3.72		3.48		4.99	
	BARIUM	71.4		0	n	10	Ω	70.2		54.7		84.4	
	BERYLLIUM	0.427	D	0.427	n	0.427	D	0.427	n	0.427	ח	0.427	ח
•	CALCIUM	16900		18000		18300		17900		7480		33100	
	CHROMIUM	9.04		1.63	Ω	10.3		7.83		9.89		8.47	
	COBALT	2.93		2.94		2.8		2.78		3.38		2.5	n
	COPPER	6.14		4.86		4.38		4.56		6.64		6.91	
	IRON	09/6		1630	Ω	9930		8940		9870		0886	
	LEAD	7.44	n	7.44	n	7.44	n	7.44	Ω	7.44	Ω	7.44	n
	MAGNESIUM	3200		2790		2500		3230		2550		4280	
	MANGANESE	149		26.7	Ω	26.7	Ω	151		128		159	
	MERCURY	0.05	n	0.02	Ω	0.082	_	0.05	Ω	0.05	n	0.05	Ω
	NICKEL	6.07		4.62		5.57		4.63		5.29		4.94	
	POTASSIUM	1970		569	Ω	569	Ω	1790		302	Ω	1990	
	SILVER	0.803	n	0.803	Ω	0.803	n	0.803	Ω	0.803	Ω	0.803	D
	SODIUM	178		179		84.1		159		241		175	
	VANADIUM	3.29	ם	3.29	n	20.3		3.56	m	22.6	Ω	3.56	n
	ZINC	25.2		4.59	Ω	4.59	n	22.9		21.2		26.7	
SEMIVOLATILES	2,4-DINITROTOLUENE	Y Z		ΥN		Ϋ́		٧×		Ϋ́		٧X	
	2 C DINITEDATOR LIENE												

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

		ARP-9	4-58C	ARP-9	14-59B	ARP-	94-59C	ARP-9	4-60B	ARP-9	4-60C	ARB-9	5-01B
Group	Analytes	5 ft	ابر	3	3 ft	5	5 ft	3	3 ft	5 ft	ی	2 ft	
ANIONS	NITRATE	٧N		NA		ν		×		ž			=
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	n	2.5	Ω	2.5	Ω	2.5	Ω	2.5	n
	2,4,6-TRINITROTOLUENE	7	n	7	Ω	7	Ω	7	Ω	7	n	7	n
	HMX	2	n	7	n	7	Ω	7	Ω	7	Ω	7	n
	RDX	1.28	Ω	1.28	n	1.28	n	1.28	Ω	1.28	Ω	1.28	n
	TETRYL	2.11	Ω	2.11	Ω	2.11	n	2.11	Ω	2.11	n	2.11	D
METALS	ALUMINUM	1100	Ω	6230		1100	Ω	9930		1100	Ω	NA	
	ARSENIC	29.3		4.68		4.87		13.3		4.38		V	
	BARIUM	10.1	n	62.1		10.1	n	144		10.1	n	N	
	BERYLLIUM	0.427	n	0.427	Ω	0.427	n	0.427	Ω	0.427	D	NA	
	CALCIUM	52700		12100		8980		93000		17300		Ϋ́N	
	CHROMIUM	6.78		10.2		1.16	D	11.5		5.96		Y	
	COBALT	3.36		3.35		2.5	n	5.98		2.5	D	N	
	COPPER	5.48		5.4		2.84	Ω	7.96		3.66		N A	
	IRON	9920		9310		1490	n	14100		1490	Ω	٧X	
	LEAD	7.44	n	7.44	n	7.44	D	7.44	Ω	7.44	Ω	×	
	MAGNESIUM	5770		2100		1810		8790		4100		Ϋ́N	
	MANGANESE	25.4	Ω	25.4	Ω	25.4	Ω	206		25.4	Ω	VA	
	MERCURY	0.072	'n	0.05	n	0.106	-	0.074	_	0.05	n	N	
	NICKEL	6.12		4.18		2.74	n	10.8		3.4		Ν	
	POTASSIUM	302	Ω	1560		305	n	2450		302	Ω	VV	
	SILVER	0.803	Ω	0.803	Ω	0.803	Ω	0.803	n	0.803	Ω	Ν	
	SODIUM	200		194		247		2450		725		N	
	VANADIUM	3.56	Ω	18.3	ſ	3.56	n	18.6	-	3.56	n	٧X	
	ZINC	20.1		3.92	n	3.92	Ω	28.7		3.92	Ω	٧N	
SEMIVOLATILES	2,4-DINITROTOLUENE	٧X		٧X		N		Ν		۷N		1.4	Ω
	2,6-DINITROTOLUENE	¥Z		Ν		NA		VN		ž		0 32	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

		ARB-	95-02B	ARB-9	5-03B	ARB-95-04B	5-04B	ARB-9	5-05B	ARP-9	5-01B	ARP-95-01C	010
Group	Analytes	2	2 ft	2	2 ft	1	ש	2 ft	2	3 ft	ی	5 ft	
ANIONS	NITRATE	-	n	_	n		n	_	Þ	0.922	=	0 922	=
EXPLOSIVES	2,4-DINITROTOLUENE	2.5	Ω	2.5	Ω	2.5	n	2.5	Þ	2	n n	2	) <b>=</b>
	2,4,6-TRINITROTOLUENE	7	Ω	7	n	7	Ω	7	n	2.5	Ω	2.5	n
	HMX	7	n	7	n	7	Ω	7	Ω	ΥN		AN	
	RDX	1.28	Ω	1.28	n	1.28	Ω	1.28	n	1.28	D	1.28	D
	TETRYL	2.11	Ω	2.11	Ω	2.11	Ω	2.11	n	2.11	D	2.11	₽
METALS	ALUMINUM	ΥN		ΥN		Ϋ́		Ν		AN		X	,
	ARSENIC	Ν		NA		Ϋ́		Ϋ́N		NA		V	
	BARIUM	٧X		Ϋ́N.		Ϋ́		ΥN		NA		Ϋ́N	
	BERYLLIUM	٧×		Ϋ́		Ϋ́		Ϋ́		NA		Y Y	
	CALCIUM	ΥN		NA		Ϋ́		NA		NA		AN	
	CHROMIUM	Ϋ́N		Ν		Ϋ́		Ν		VN		X	
	COBALT	Ν		Y N		Ϋ́		٧X		NA		NA	
	COPPER	٧X		X		Ϋ́		VΝ		ΥN		Ϋ́Χ	
	IRON	Y X		NA		N		N		Ϋ́		NA	
	LEAD	Ϋ́N		VA		Ϋ́		NA		Ϋ́		AN	
	MAGNESIUM	Ϋ́		NA		NA		٧X		Ϋ́		N	
	MANGANESE	¥Z.		NA		Ν		Ν		Y Y		Ϋ́	
	MERCURY	Y Y		ΥN		N		Ϋ́		٧×		N	
	NICKEL	Y Y		Ϋ́		NA		٧		Ϋ́		NA	
	POTASSIUM	Y Y		NA		Ϋ́		Ϋ́		NA		٧N	
	SILVER	Ϋ́		Ϋ́		NA		Ϋ́		N A		NA	
	SODIUM	Y Y		ΥN		NA		Ϋ́		NA		NA	
	VANADIUM	Y X		Ν		ΥN		Ϋ́		NA		٧X	
	ZINC	Y Y		Ν		Ϋ́		NA		Y Y		ΝA	
SEMIVOLATILES	2,4-DINITROTOLUENE	1.4	n	1.4	<b>D</b>	1.4	n	1.4	Ω	Ν		NA	
	2,6-DINITROTOLUENE	0.32	ב	0.32	Þ	0.32	<b>-</b>	0.32		Y.		N. A.	

Summary of Analytes Detected in Soil for the AED Test Range (SWMU 40)

Subsurface Soil (continued)

Group		AKK-95-02B	-0219	ARP-9	2-02C	ARP-9	ARP-95-03B	ARP-95-03C	5-03C	ARP-9	5-03C	
	Analytes	3 ft		S ft	ی	3	2	5 ft	ايع	5 ft (	5 ft (dup)	
ANIONS	NITRATE	0.922	Ω	0.922	Ω	0.922	Ω	0.922	Ω	0.922	Ω	
EXPLOSIVES	2,4-DINITROTOLUENE	7	n	7	n	7	Ω	7	n	7	D	
	2,4,6-TRINITROTOLUENE	2.5	Ω	2.5	Ω	2.5	n	2.5	n	2.5	Ω	
	HMX	Ϋ́Z		Ϋ́		ΥN		٧N		X	,	
	RDX	1.28	Ω	1.28	Ω	1.28	n	1.28	n	1.28	Ω	
	TETRYL	2.11	Ω	2.11	Ω	2.11	Ω	2.11	ח	2.11	) <b>=</b>	
METALS	ALUMINUM	×z		NA		٧Z		X	,	ž	,	
	ARSENIC	Ϋ́N		٧X		V		YZ		Z		
	BARIUM	Ϋ́N		¥N.		NA		Ϋ́		XX		
	BERYLLIUM	NA		NA		V		X		AN		
	CALCIUM	٧N		N		Ϋ́		N		Ž		
	CHROMIUM	٧×		N		NA		Ϋ́		ž		
	COBALT	Ϋ́Z		Ν		Y <sub>N</sub>		Ϋ́		Y.		
	COPPER	٧×		Ϋ́		N		VN		AN		
	IRON	Ϋ́Z		N		Ϋ́		ΥN		Y'A		
	LEAD	NA		N A		Ϋ́		Ϋ́		X		
	MAGNESIUM	NA		ΥN		Ϋ́		Y		ž		
	MANGANESE	NA		NA		N		YZ		X		
	MERCURY	Ϋ́N		Ν		Ν		٧N		Y		
	NICKEL	ΝA		Ϋ́		NA		VN		Ϋ́N		
	POTASSIUM	٧X		Ϋ́		٧X		٧X		٧X		
	SILVER	ΥZ		Ϋ́		NA		٧X		YZ		
	SODIUM	AN		Ϋ́		NA NA		Ϋ́Z		AN		
	VANADIUM	ΥN		Ϋ́		ΥN		×z		X		
	ZINC	Ϋ́Z		NA		٧X		Ϋ́N		×		
SEMIVOLATILES	2,4-DINITROTOLUENE	٧X		Ϋ́		×Z		٧X		×		
	2,6-DINITROTOLUENE	AN		N		AN		NA N		X		

All values are in µg/g (equal to ppm)

NA = Not analyzed

N = Not analyzed

U = Not detected; value is the Certified Reporting Limit.

Dup = Duplicate analysis

J = Value is estimated

R = Data rejected